PLAKSIN, I. I.

USSR/Chemistry - Metallurgy

FD-3237

Card 1/1 Pub. 41-18/22

Author : Bessonov, S. V., Plaksin, I. I., and Tyurnikova, V. I., Moscow

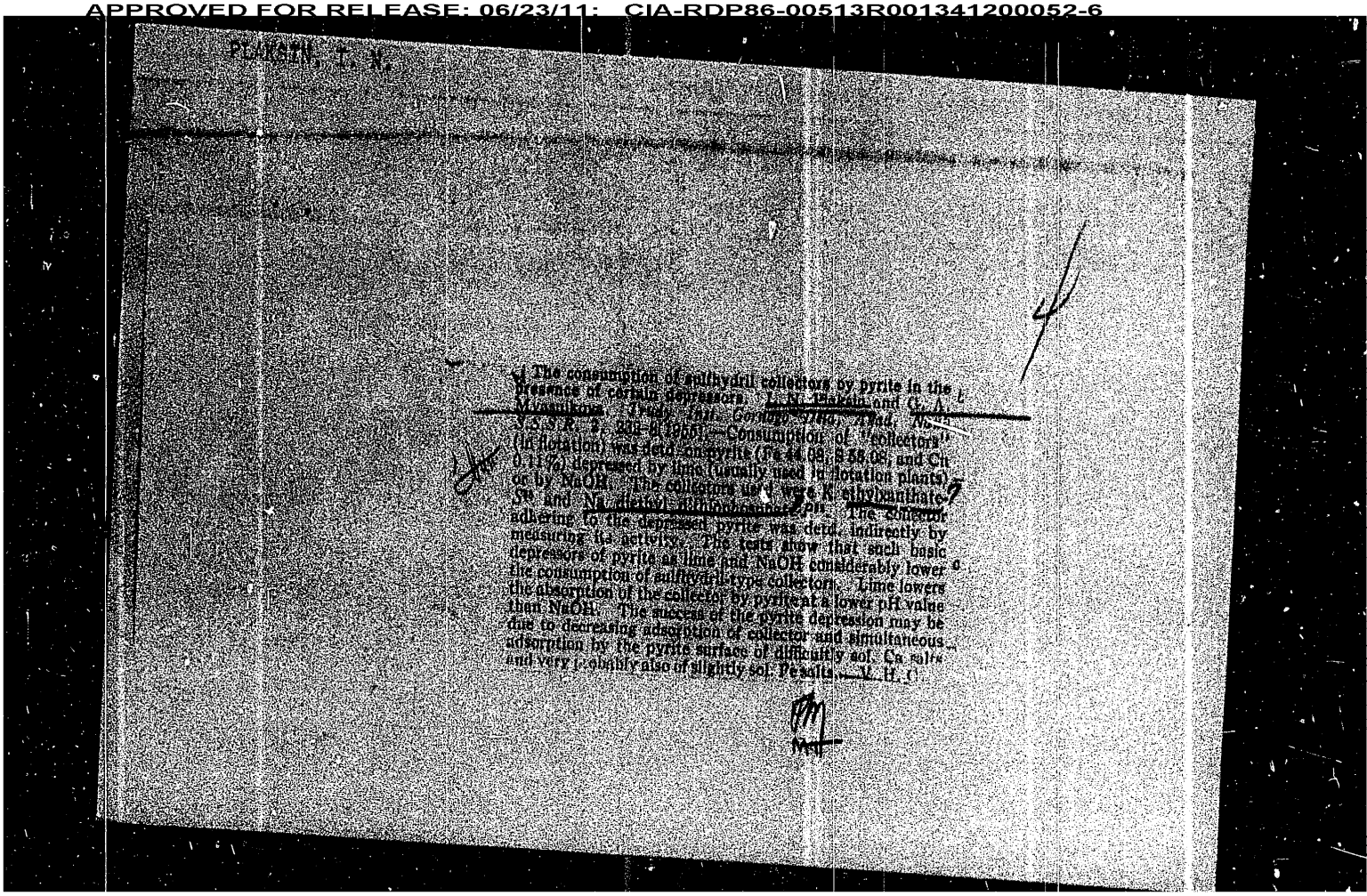
Title : On the Influence of Oxygen on the Floatability of Chalcopyrite in the Presence of Oleic Acid

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 7, 137-138, Jul 55

Abstract : Describes flotation (with argon) of chalcopyrite pulverized under agron and mixed 2:3 with quartz with 4:1 ratio of liquid: solids. Water used contained 0.16 and 36.0 milligrams of oxygen per liter (20°C); medium was neutral (pH=7.0, water) and alkaline (pH=9.0, addition of NaOH); reagents used were oleic acid and pine oil (5 grams per ton). Results given on graph and in table show definite influence of oxygen as activator. Four references, all USSR.

Institution : Institute of Mining, Acad Sci USSR

Submitted : 14 April 1955



PLAKSIN, I. N.

The consumption of sulfhydril collectors by pyrite in the presence of certain depressors. I. N. Plaksin and G. A. Mironkova. *Trudy Inst. Gornogo Dela, Akad. Nauk S.S.S.R.* 3, 203–8 (1956).—Consumption of "collectors" (in flotation) was detd. on pyrite (Fe 44.08, S 53.08, and Cu 0.11%) depressed by lime (usually used in flotation plants) or by NaOH. The collectors used were K ethylxanthate, Se and Na dialkyl dithiophosphate. The amount adhering to the depressed pyrite was detd. indirectly by measuring its activity. The tests show that such basic depressors of pyrite as lime and NaOH considerably lower the consumption of sulfhydril-type collectors. Lime lowers the absorption of the collector by pyrite at a lower pH value than NaOH. The success of the pyrite depression may be due to decreasing adsorption of collector and simultaneous adsorption by the pyrite surface of difficultly sol. Ca salts and very probably also of slightly sol. Pe salts.—V. H. C.

PLAKSIN, I.N.; RAUKHVARGER, Ye.L.

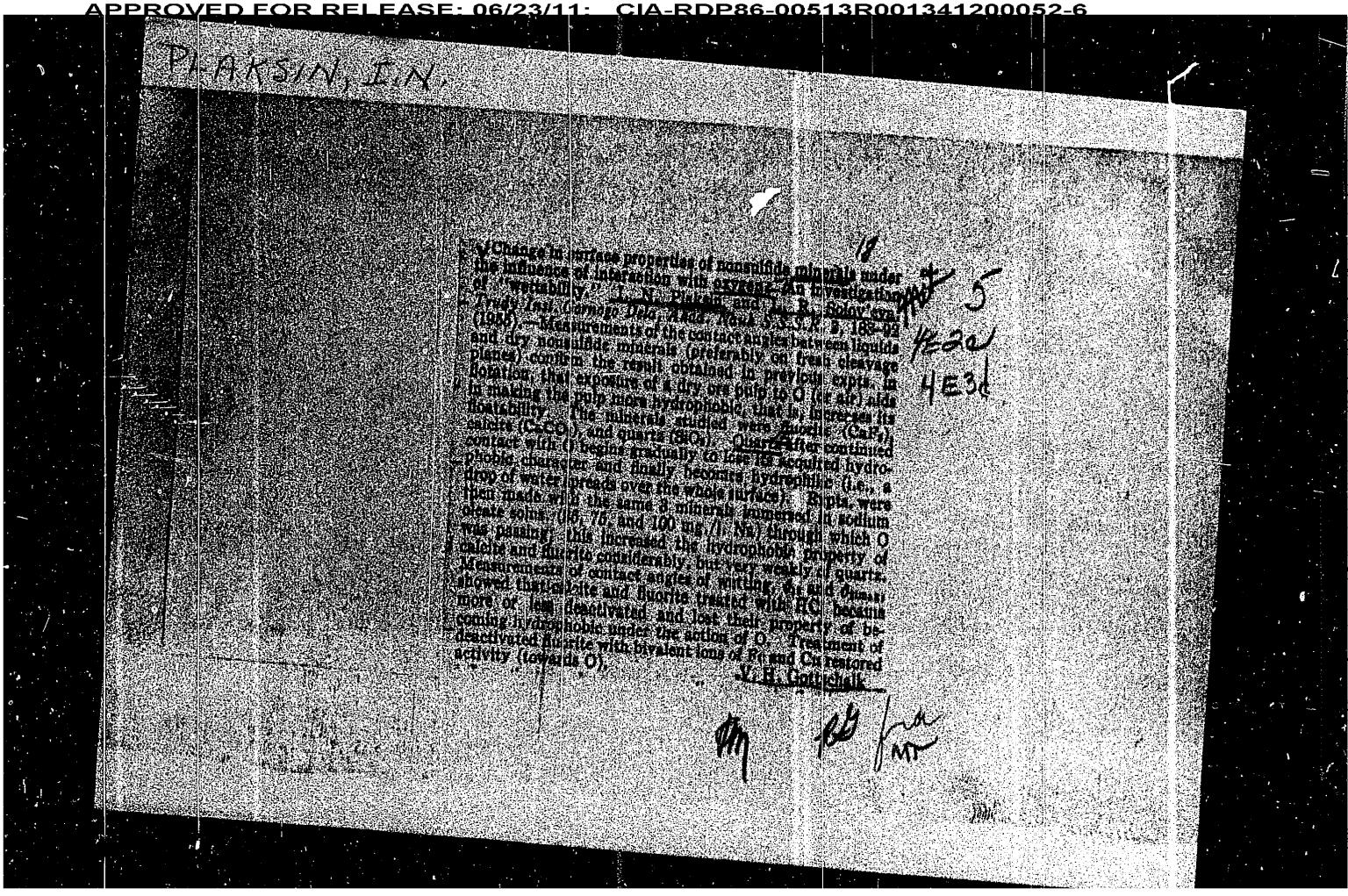
Effect of aeration on the flotation of copper-zinc pyrite. Trudy Inst.gor.dela no.2:215-224 '55. (MLRA 9:3)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Flotation) (Chalcopyrite)

PLAKSIN, I.N.; BESSONOV, S.V.; SOLOV'YEV, L.R.

Study of modifications in flotation properties of the surface of sulfides under the effect of gases and reagents. Trudy Inst.gor. dela no.2:193-205 '55. (MLRA 9:3)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Flotation) (Sulfides)



PLAKSIN, I.N.

18

Changes in surface properties of nonsulfide minerals under the influence of interaction with aerosols. An investigation of "wettability." I. N. Plaksin and Yu. R. Solov'eva. Trudy Inst. Gornogo Dela, Akad. Nauk S.S.S.R. 5, 188-92 (1956).—Measurements of the contact angles between liquids and dry nonsulfide minerals (preferably on fresh cleavage planes) confirm the result obtained in previous expts. in flotation, that exposure of a dry ore pulp to O (or air) aids in making the pulp more hydrophobic, that is, increases its floatability. The minerals studied were fluorite (CaF_2), calcite ($CaCO_3$), and quartz (SiO_2). Quartz after continued contact with O begins gradually to take up acquired hydrophobic characters and finally becomes hydrophobic (i.e., a drop of water spreads over the whole surface). Expts. were then made with the same 3 minerals immersed in sodium oleate solns. (0.6, 75, and 100 mg./l. Na) through which O was passing; this increased the hydrophobic property of calcite and fluorite considerably, but very weakly of quartz. Measurements of contact angles of writing, C_6H_6, and $CHBr_3$ showed that calcite and fluorite treated with RCO$_2$Na became more or less deactivated and lost their property of becoming hydrophobic under the action of O. Treatment of deactivated fluorite with bivalent ions of Pb and Cu restored activity (towards O).

-V. H. Gottschalk

5
E2a
E3d

PLAKSIN, I. N.

USSR

10839* Results and Prospects of the Investigation of the Interaction of Reagents With Minerals in Flotation. **Rezul'taty i perspektivy issledovaniia vzaimodeistviia reagentov s mineralami v flotatsii.** (Russian.) I. N. Plaksin. *Izvestiia Akademii Nauk SSSR, Otdelenie Tekhnicheskikh Nauk*, 1955, no. 1, Jan., p. 109-134.

Determination of xanthogenates by radioactive isotopes; absorption data; time of adherence of particles to air bubble. Table, graphs. 33 ref.

PLAKSIN, I.N.

4880. GENERAL RESULTS OF WORK ON THE FLOTATION OF COALS AND [illegible] IN THE SCIENTIFIC AND TECHNICAL DEVELOPMENT. Klassen, V.I. and Plaksin, I.N. (Izv. Akad. Nauk SSSR, Otdel. Tekh. Nauk (Bull. Acad. Sci. U.S.S.R., Sect. Tech. Sci.), Nov. 1955, 101-108). A review of recent Soviet work.

USSR/ Scientists - Metallurgy

Card 1/1 Pub. 124 - 14/40

Authors : Plaksin, I. N., Memb. Corresp., Acad. of Sc., USSR; Petrov, D. A.; Sudopiatov, A. P.; and Syskov, K. I., Dr. of Techn. Sc.

Title : Mining and metallurgy in the German Democratic Republic

Periodical : Vest. AN SSSR 1, 69-71, Jan 1955

Abstract : Briefs are presented of the special scientific meeting called by the Freiberg Mining Academy for Sept. 29 - Oct. 2, 1954. The meeting was devoted to the 50-th anniversary of the death of the famous German chemist and metallurgist, Klemens Winkler (1838-1904). A progress report of the Bergakademie (Mining Academy) for 1954 was presented. Names of personalities attending the meeting are listed

Institution : .....

Submitted : .....

ANDREYEV, A.V. (continued) ..... Card 4.

[Concise polytechnical dictionary] Kratkii politekhnicheskii slovar'. Redaktsionnyi sovet: IU.A.Stepanov i dr. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1955. 1136 p. (MLRA 8:12)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Technology--Dictionaries)

ANDREYEV, A.V.,(continued) .... Card 3.

TRET'YAKOV, A.P., retsenzent, redaktor; FAYERMAN, Ye.M., retsenzent, redaktor; KHACHATYROV, T.S., retsenzent, redaktor; CHERNOV, H.V., retsenzent, redaktor; SHERGIN, A.P., retsenzent, redaktor; SHESTOPAL, V.M., retsenzent, redaktor; SHESHKO, Ye.F., retsenzent, redaktor; SHCHAPOV, N.M., retsenzent, redaktor; YAKOBSON, M.O., retsenzent, redaktor; STEPANOV, Yu.A., Professor, redaktor; DEM'YANYUK, F.S., professor, redaktor; ZNAMENSKIY, A.A., inzhener, redaktor; PLAKSIN, I.N., redaktor; RUTOVSKIY, B.N. [deceased] doktor khimicheskikh nauk, professor, redaktor; SHUKHGAL'TER, L.Ya., kandidat tekhnicheskikh nauk, dotsent, redaktor; BRESTINA, B.S., redaktor; ZNAMENSKIY, A.A., redaktor.

(Continued on next card)

ANDREYEV, A.B. (continued) .... Card 2.

YAKOVLEV, A.V.; ANDREYEV, Ye.S., retsenzent, redaktor; BERKEN-GEYM, B.M., retsenzent, redaktor; BERMAN, L.D., retsenzent, redaktor; BOLTINSKIY, V.N., retsenzent, redaktor; BONCH-BRUYEVICH, V.L., retsenzent, redaktor; VELLER, M.A., retsenzent, redaktor; VINOGRADOV, A.V., retsenzent, redaktor; GUDTSOV, N.T., retsenzent, redaktor; DEGTYAREV, I.L., retsenzent, redaktor; DEM'YANYUK, F.S., retsenzent; redaktor; DOBROSMYSLOV, I.N., retsenzent, redaktor; YELANCHIK, G.M. retsenzent, redaktor; ZHEMOCHKIN, D.N., retsenzent, redaktor; SHURAVCHENKO, A.N., retsenzent, redaktor; ZLODEYEV, G.A., retsenzent, redaktor; KAPLUNOV, R.P., retsenzent, redaktor; KUSAKOV, M.M., retsenzent, redaktor; LEVINSON, L.Ye., [deceased] retsenzent, redaktor; MALOV, N.N., retsenzent, redaktor; MARKUS, V.A. retsenzent, redaktor; METELITSYN, I.I., retsenzent, redaktor; MIKHAYLOV, S.M., retsenzent; redaktor; OLIVETSKIY, B.A., retsenzent, redaktor; PAVLOV, B.A., retsenzent, redaktor; PANYUKOV, N.P., retsenzent, redaktor; PLAKSIN, I.N., retsenzent, redaktor; RAKOV, K.A. retsenzent, redaktor; RZHAVINSKIY, V.V., retsenzent, redaktor; RINBERG, A.M., retsenzent; redaktor; ROGOVIN, N. Ye., retsenzent, redaktor; RUDENKO, K.G., retsenzent, redaktor; RUTOVSKIY, B.N., [deceased] retsenzent, redaktor; RYZHOV, P.A., retsenzent, redaktor; SANDOMIRSKIY, V.B., retsenzent, redaktor; SKRAMTAYEV, B.G., retsenzent, redaktor; SOKOV, V.S., retsenzent, redaktor; SOKOLOV, N.S., retsenzent, redaktor; SPIVAKOVSKIY, A.O., retsenzent, redaktor; STRAMENTOV, A.Ye., retsenzent, redaktor; STRELETSKIY, N.S., retsenzent, redaktor;

(Continued on next card)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200052-6

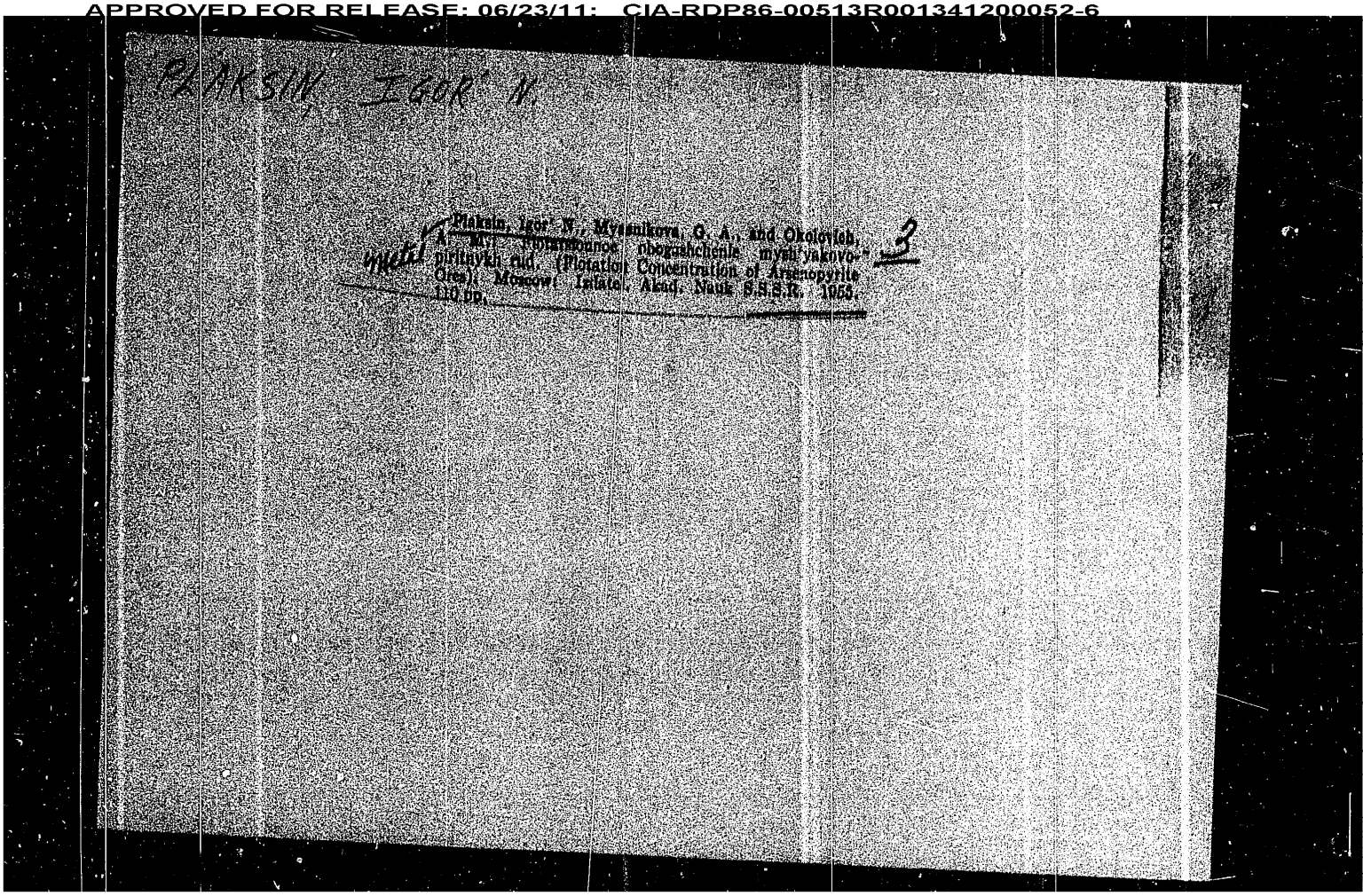
AUTHORS: ANDREYEV, A.B.; ANTONOV, A.I.; ARAPOV, P.P., BARMASH, A.I., BEDNYAKOVA, A.B.; BENIN, G.S.; BERESNEVICH, V.V.; BERNSHTEYN, S.A.; BITYUTSKOV, V.I.; BLYUMENBERG, V.V.; BONCH-BRUYEVICH, M.D.; BORMOTOV, A.D.; BULGAKOV, N.I.; VEKSLER, B.A.; GAVRILENKO, I.V.; GENDLER, Ye.S., [deceased]; GERLIVANOV, N.A., [deceased]; GIBSHMAN, Ye.Ye.; GOLDOVSKIY, Ye.M.; GORBUNOV, P.P.; GORYAINOV, F.A.; GRINBERG, B.G.; GRYUNER, V.S.; DANOVSKIY, N.F.; DZEVUL'SKIY, V.M., [deceased]; DREMAYLO, P.G.; DYBETS, S.G.; D'YACHENKO, P.F.; DYURNBAUM, N.S., [deceased]; YEGORCHENKO, B.F. [deceased]; YEL'YASHKEVICH, S.A.; ZHEREBOV, L.P.; ZAVEL'SKIY, A.S.; ZAVEL'SKIY, F.S.; IVANOVSKIY, S.R.; ITKIN, I.M.; KAZHDAN, A.Ya.; KAZHINSKIY, B.B.; KAPLINSKIY, S.V.; KASATKIN, F.S.; KATSAUROV, I.N.; KITAYGORODSKIY, I.I.; KOLESNIKOV, I.F.; KOLOSOV, V.A.; KOMAROV, N.S.; KOTOV, B.I.; LINDE, V.V.; LEBEDEV, N.V.; LEVITSKIY, N.I.; LOKSHIN, Ya.Yu; LUTTSAU, V.K.; MANNERBERGER, A.A.; MIKHAYLOV, V.A.; MIKHAYLOV, N.M.; MURAV'YEV, I.M.; NYDEL'MAN, G.E.; PAVLYSHKOV, L.S.; POLUYANOV, V.A.; POLYAKOV, Ye.S.; POPOV, V.V.; POPOV, N.I.; RAKHLIN, I.Ye., RZHEVSKIY, V.V.; ROZENBERG, G.V.; ROZENTRETER, B.A.; ROKOTYAN, Ye.S.; RUKAVISHNIKOV, V.I.; RUTOVSKIY, B.N. [deceased]; RYVKIN, P.M.; SMIRNOV, A.P.; STEPANOV, G.Yu, STEPANOV, Yu.A.; TARASOV, L.Ya.; TOKAREV, L.I.; USPASSKIY, P.P.; FEDOROV, A.V.; FERE, N.E.; FRENKEL', N.Z.; KHEYFETS, S.Ya.; KHLOPIN, M.I.; KHODOT, V.V.; SHAMSHUR, V.I.; SHAPIRO, A.Ye.; SHATSOV, N.I.; SHISHKINA, N.N.; SHOR, E.R.; SHPICHENETSKIY, Ye.S.; SHPRINK, B.E.; SHTERLING, S.Z.; SHUTYY, L.R.; SHUKHGAL'TER, L. Ya.; ERVAYS, A.V.;

(Continued on next card)

PLAKSIN, Igor' Nikolayevich, redaktor; RUDENKO, Konstantin Gerasimovich; SMIRNOV, Aleksandr Nikolayevich; TROITSKIY, Aleksand Vasil'yevich; FISHMAN, Mikhail Aleksandrovich; IVANOVSKIY, M.D., redaktor; ROMANOVA, Z.A., redaktor; KOROVENKOVA, Z.A., tekhnicheskiy redaktor.

[Technological equipment of concentration plants] Tekhnologicheskoe oborudovanie obogatitel'nykh fabrik. Moskva, Ugletekhizdat. Pt. 1. [Design and selection of equipment] Raschet i vybor oborudovaniia. 1955. 415 p. (MLRA 9:1)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Coal preparation)



PLAKSIN, I. N.

USSR/Chemistry - Chemical technology

Card 1/1 : Pub. 22 - 22/41

Authors : Plaksin, I. N., Memb. Corresp. of Acad. of Sc. USSR, and Bessonov, S. V.

Title : Oxygen absorption in sulfide suspensions

Periodical : Dok. AN SSSR 98/2, 251-252, Sep 11, 1954

Abstract : The absorption of oxygen from neutral and alkali solutions by certain sulfide minerals was investigated. It was found that oxygen is absorbed by pyrite and galenite mainly during the first moment of contact whereas chalcopyrite absorbs the oxygen gradually. One USSR reference (1954). Graphs.

Institution : Academy of Sciences, USSR, Mining Institute

Submitted : May 28, 1954

PLAKSIN, I. N.

USSR/Minerals - Chemical technology

Card 1/1 : Pub. 22 - 28/44

Authors : Plaksin, I. N. Memb. Corresp. of Acad. of Sc. USSR.; and Khazhinskaya, G. N.

Title : Reaction of reagents with zinc blende

Periodical : Dok. AN SSSR 97/6, 1045-1046, Aug 21, 1954

Abstract : The reaction of zinc blende with ethyl xanthogenate, considered one of the most effective reagents, was investigated by the method of radioactive isotopes. It was established that the clear variety of sphalerite (zinc blende) transforms smoothly into froth without any additional activation, the dark ferrous zinc blende floats imperfectly and can absolutely not be floated without previous activation. Two references: 1-USSR and 1-USA (1932-1952).

Institution : .....

Submitted : March 29, 1954

PLAKSIN, I. N.

USSR/ Minerals - Chemical technology

Card : 1/1

Authors : Plaksin, I. N., Memb. Corres. of Acad. of Sc. USSR; and Bessonov, S. V.

Title : Adherence of sulfide minerals to an air bubble in the absence of reagents

Periodical : Dokl. AN SSSR, 97, Ed. 3, 495 - 498, July 21, 1954

Abstract : Various minerals, each containing at least 96 - 98% of pure sulfide, were investigated to determine the period of adhesion of mineral particles to the air blisters formed on the surface of the minerals. It was found that oxygen dissolved in water acts on the surface of the mineral particles, thus promoting a sharp increase in the rate of adhesion. The changes in adhesion time, of the particles, are shown in graphs. Eight USSR and 1-USA references.

Institution : Acad. of Sc. USSR, Mining Institute

Submitted : March 22, 1954

PLAKSIN, I. N.

62

The mechanism of the action of nonpolar reagents on the flotation of coal. V. I. Klassen and I. N. Plaksin. *Doklady Akad. Nauk S.S.S.R.* 95, 853–6(1954); cf. *C.A.* 49, 4960*f*.—Nonpolar reagents have been widely used as collectors in the concn. of coal and other ores. These reagents considerably increase the upper limit of floatable grain size. The reason for this, until now, had been established only to a first approximation. K. and P. had assumed that such an action might be connected with the formation of "strings" of reagent around the three-phase adhesion boundary. The interaction of kerosine and decalin with grains of coal was studied. The reagents were colored with a red nonpolar dye and were emulsified in water. Then grains of coal were placed in the emulsion, and the behavior of the reagent was observed with a binocular microscope. From these expts. it was found that: (1) Droplets of emulsions of both the kerosine and the Decalin are attached to the coal in aq. medium. (2) Nonpolar reagents readily formed stable finely dispersed emulsions in water. (3) If coal grains float on the surface of water in which emulsified nonpolar reagent is present, a border of nonpolar reagent forms immediately along the three-phase wetting boundary. This border is more intensely colored along the surface of the grains. (4) If a group of adjacent particles of coal are floating on the water surface, the part of the water surface between them is tightened by a film of kerosine, and the color of the film is more intense in the vicinity of the three-phase contact. Three colored photomicrographs appear with the report.

—Gladys S. Macy

(1)

PLAKSIN, I.N.; VLASOVA, N.S., kandidat tekhnicheskikh nauk;
KOYBASH, V..., kandidat tekhnicheskikh nauk.

Reviews of D.S.Emel'ianov's book "Some problems of the theory of coal flotation." Ugol' 29 no.2:47-48 F '54. (MLRA 7:1)

1. Chlen-korrespondent Akademii nauk SSSR (for Plaksin).
(Coal preparation) (Emel'ianov, D.S.)

PLAKSIN, I.N.

Remarks on S.I. Mitrofanov's article "Rate of flotation." TSvet. met. 27 no.1:71-75 Ja-F '54. (MLRA 10:9)

(Flotation)
(Mitrofanov, S.I.)

ПЛАКСИН, И. Н.

USSR/Scientists

Card 1/1 : Pub. 124 - 14/24

Authors : Plaksin, I. N., Memb. Corresp. of Acad. of Sc. USSR; and Lidin, G. D., Dr. of Tech. Sc.

Title : Academician A. A. Skochinskiy, Hero of Socialist Labor

Periodical : Vest. AN SSSR 11, 70-74, November 1954

Abstract : Editorial honoring the 80th birthday and 55th anniversary of the scientific work of Academician and Mining Engineer A. A. Skochinskiy is presented. Illustration.

Institution : .....

Submitted : .....

USSR/Engineering - Metallurgy FD - 1593

Card 1/1 : Pub. 41-14/18

Author : Plaksin, I. N.; Khazhinskaya, G. N.; Tyurnikova, V. I.; Moscow

Title : Investigation of certain questions of the interaction of sulfide minerals with flotation reagents

Periodical : Izv. AN SSSR. Otd. tekh. nauk 8, 123-132, Aug 1954

Abstract : Uses radioactive isotopes for study of absorption of certain sulfide minerals (zinc blende, chalcopyrite, and pyrite) by collector reagents as follows: ethyl zanogenate (radioactive isotope S 35) and sodium diethyldithiophosphate (radioactive isotope P 32), in neutral and in calcium solution and also after preliminary processing of minerals with oxygen. Graphs; tables. Eight references.

Institution :

Submitted : July 10, 1954

USSR/Engineering - Metallurgy FD-1114

Card 1/1 Pub. 41-8/13

Author : Plaksin, I. N. and Anfimova, Ye. A., Moscow

Title : Investigation of certain problems of the reaction of xanthogenates with the surface of sulfidic minerals of copper and zinc under flotation conditions.

Periodical : Izv. AN SSSR, Otd, tekh. nauk 5, 95-104, May 1954

Abstract : Study the effect of combinations of xanthogenates (with different lengths of the chain of the hydrocarbon radical) on flotability of copper pyrites and zinc blende, including following problems: (1) effect of stability of a layer of xanthogenates on technological characteristics of flotation; (2) effect of density of the xanthogenate layer and degree of coverage of the surface of particles of the mineral by the reagent on the characteristics of flotation; (3) effect of joint use of two xanthogenates with different lengths of the chain of hydrocarbon radicals on quantitative characteristics indicated in (2); (4) quantitative distribution of various xanthogenates, absorbed by surface of minerals, observed during use of combinations of two xanthogenates. Graphs; tables.

Submitted : April 27, 1954

PLAKSIN, I.N.

Role of Russian scientists in the development of nonferrous metallurgy and ore dressing. Trudy po ist.tekh. no.5:3-15 '54. (MLRA 8:1)
(Nonferrous metals--Metallurgy; (Ore dressing)

FD-1373

USSR/Mining

Card 1/1 : Pub. 41-5/13

Author : Klassen, V. I., and Plaksin, I. N., Corresponding Member, Academy of Sciences, USSR

Title : The mechanism of action of certain reagents and of pulp aeration in coal flotation

Periodical : Izv. AN SSSR. Otd. tekh. nauk 3, 62-71, March 1954

Abstract : Presents results of investigation into mechanism of action of nonpolar reagents, inorganic salts, and pulp aeration during flotation of coal. Graphs, table. Sixteen references

Institution :

Submitted : March 9, 1954

PLAKSIN, I.N.

Diaphragm-type jigs with multiple frequency screens. Trudy Inst. gor.dela 1:262-277 '54. (MLRA 7:12)

1. Chlen-korrespondent AN SSSR.
(Mining machinery)

PLAKSIN, I.N.; ANFIMOVA, Ye.A.

Study of xanthogenate-sulfide mineral surface interactions.
Trudy Inst.gor.dela 1:225-234 '54. (MLRA 7:12)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Ore dressing) (Xanthogenates)

PLAKSIN, I.N.

USSR

Investigation of the possible intensification of the flotation process through utilizing combined collector reagents. (2)
I. N. Plaksin, V. A. Glembotskii, and A. M. Okolovich. *Trudy Inst. Gornogo Dela, Akad. Nauk S.S.S.R.* 1, 213-24 (1954).—Ethyl and amyl xanthates and diethyldithiophosphate in many cases are synergistic collector agents. Combinations of these materials often increase yields and speeds of the concn. of arsenopyrite and galena. J. A. K.

PIAKSIN, I. N.
USSR/Mining

FD 273

Card 1/1

Authors : Bessonov, S. V., and Piaksin, I. N., Corresponding Member

Title : Effect of oxygen on floatability of galena and chalcopyrite

Periodical : Iz. Ak. Nauk SSSR, OTN, 1, 114-127, Jan 1954

Abstract : Presents a new method for investigating the effect of oxygen on flotation of pure sulfide minerals and gives experimental data obtained for galena and chalcopyrite. Table, illustrations, graphs.

Institution : Academy of Sciences of the USSR

Submitted : December 18, 1953

PLAKSIN, I.N., redaktor; BLAGOV, I.S., inzhener, redaktor; ALADOVA, Ye. I., tekhnicheskiy redaktor; KOROVENKOVA, Z.A., tekhnicheskiy redator.

[Flotation of coal; proceedings of a scientific and technical conference] Flotatsiia uglei; trudy nauchno-tekhnicheskogo soveshchaniia. Moskva, Ugletekhizda, 1954. 251 p. (MLRA 8:7)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Coal preparation)

PLAKSIN, I.N., chlen-korrespondent; CHAPLYGINA, Ye.M.

Effect of gases on the density of the adsorption layer of sodium oleate during flotation of certain non-sulfide minerals. Dokl.AN SSSR 91 no.2: 301-303 Jl '53. (MLRA 6:6)

1. Institut gornogo dela Akademii nauk SSSR. 2. Akademiya nauk SSSR (for Plaksin). (Sodium oleate) (Flotation)

PLAKSIN, I. [illegible]

Ore dressing. Tekh.mol. 21 no.12:23-27 D '53. (MLRA 6:11)

1. Chlen-korrespondent Akademii nauk SSSR. (Ore dressing)

ZOZULYA, I.I.; PLAKSIN, I.N., chlen-korrespondent.

Intensification of the flotation process of sulfide minerals. Izv.AN SSSR Otd.tekh.nauk no.7:964-968 Jl '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Plaksin). (Flotation) (Sulfides)

PLAKSIN, I. N.

Fuel (2)

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Fuels and Carbonization Products

Effect of sludge on flotation of fine coal. I. N. Plaksin and N. S. Vlasova. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, 882-95.—It was shown experimentally that extended preliminary agitation of coal pulp before flotation enrichment is undesirable as it lowers the yield of the concentrate and increases its ash content, with corresponding increase of finely dispersed coal particles. The sludge tends to adhere to the larger particles of coal in the concentrate (about 0.075 mm. diam.). With agitation some 50% of the coal grains remain in the waste. Mech. washing of the sludged particles restores the flotation ability. Artificial addn. of prewashed and dried sludge also causes deterioration of the flotation of coal pulp. G. M. K.

VERKHOVSKIY, I.M.; PLAKSIN, I.N., chlen-korrespondent.

Significance of contributions to the theory of wet gravitational concentration of coal by Russian scientists. Izv.AN SSSR Otd.tekh.nauk no.4:613-622 Ap '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Plaksin). (Coal preparation)

PLAKSIN, I.N., chlen korrespondent.

Role of Russian scientists in the development of non-ferrous metallurgy and the dressing of ores. Izv. AN SSSR. Otd.tekh.nauk. no.3:450-462 Mr '53. (MLRA 6:5)

1. Akademiya nauk SSSR. (Metallurgy--History)

KLASSEN, V.I.; MOKROUSOV, V.A.; PLAKSIN, I.N., retsenzent; TROITSKIY, A.V., gornyi direktor, retsenzent.

[Introduction to the flotation theory] Vvedenie v teoriiu flotatsii. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 463 p. (MLRA 7:8)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Flotation)

PLAKSIN, I. N.

USSR/Mining - Mineral Dressing, Flotation — 21 Jan 52

"Effect of Gases on Flotation of Non-Sulfide Minerals," I. N. Plaksin, Corr Mem, Acad Sci USSR, Ye. M. Chaplygina

"Dok Ak Nauk SSSR" Vol LXXXII, No 3, pp 451-453

Investigates behavior of phosphorite, quartz, calcite and fluorite during their flotation after preliminary blowing with gases and concludes that adsorption of oxygen, by blowing or from the air, improves floatability of minerals, while nitrogen

211T84

promotes their depression. Effect of gases is result of their phys adsorption on surface of minerals. Carbonic acid, floating soap and sodium oleate were used as collectors in expts.

211T84

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200052-6

USSR/Mining - Mineral Dressing 1 Jan 52

"Combined Action of Several Collectors in the Flotation Process," I. N. Plaksin, Corr Mem, Acad Sci USSR, V. A. Glembotskiy, Inst of Mining, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 82, No 1, pp 139-141

Discusses results of expts for using mixts of potassium ethyl and isoamyl xanthates as collecting agents in flotation of galenite. States that these mixts proved to be more efficient collectors than any xanthate used separately. Phenomenon is

230T48

explained by difference in activity degrees of sep parts of surface toward various reagents. Therefore, article notes, decreased adsorptive capacity of mineral surface in respect to one collector may be combined with increased activity in respect to other agent. Also discusses effect of ore coarseness on floatability.

(CA 47 no.21 : 11097 '53)

230T48

PLAKSIN, I. N.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200052-6

PLAKSIN, I.N.

USSR/Metals
Mining Methods

Aug 48

"Changes in the Wetting of Metals and Sulfide Minerals Caused by the Action of Various Gases," I. N. Plaksin, Corr Mem, Acad Sci USSR, S. V. Bessonov, Mining Inst, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXI, No 5

Subject investigation showed oxygen's selective action on the surface of the minerals.

24/49T100

PLAKSIN, I. N.

PA 77T86

USSR/Metals
Flotation
Gold

May 1948

"The Problem of the Effect of Adsorption and the Chemical Action of Oxygen on the Flotation Properties of Gold, Silver and Copper Surfaces," I. N. Plaksin, Corr Mem, Acad Sci USSR; S. V. Bessonov, Inst of Mining, Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LX, No 4

Discusses results of experiments on above subject. Readings are tabulated and plotted, showing boundary angle of wetting against time of contact with water for each metal. Submitted 9 Mar 1948.

77T86

PLAKSIN, I. N.

47T52

USSR/Minerals Mar 1948
Flotation
Pyrites

"Selective Protective Action of Thiocyanates during Flotation of Pyrite and Arsenopyrite," I. N. Plaksin, A. I. Sinel'nikova, K. A. Efremova, Mining Inst, Acad Sci USSR, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 8

Describes experiments showing that diluted rodanide produces protective action on pyrite, but that copper ions must be added to arsenopyrite to obtain same result.

[redacted]

47T52

1. PLAKSIN, I. N., Acad.

2. USSR (600)

4. Flotation

7. Problems of research in flotation agents and the investigation of their reaction with minerals. Vest. AN SSSR 22, no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

PLAKSIN, I. N.

PA 248T89

USSR/Minerals - Flotation, Reagents Sep 52

"Effect of Gases on the Flotation of Nonsulfidic Minerals," I. N. Plaksin, Corr Mb Acad Sci USSR; Ye. M. Chaplygina

Iz Ak Nauk SSSR, Otdel Tekh Nauk, No 9, pp 1353-1359

Investigates effects of air and oxygen of floatability of phosphate, quartz, calcite and fluorite Concludes that investigated gases may be used in flotation of phosphate and fluorite ores as reagents intensifying extraction of these minerals into froth and promoting better selective sepn of minerals from quartz.

248T89

PLAKSIN, I. N.

PA 244T58

USSR/Engineering - Minerals, Dressing — Mar 52

"Joint Application of Several Collecting Agents for Intensification of Pyrite Flotation," I. N. Plaksin, Corr Mem Acad Sci USSR, V. A. Glembotskiy, A. M. Okolovich

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 3, pp 405-415

Analyzes data obtained in flotation of pyrite with ethyl and amyl xanthates, diethyl dithiophosphate, and with mixtures of these collectors, establishing possibility of intensifying flotation process by joint use of two or more collectors. Highest

244T58

extraction, 91.4%, was attained in case of using mixture of diethyl dithiophosphate with amyl xanthate.

244T58

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200052-6

PLAKSIN, I. N.

USSR/Mining - Mineral Dressing Feb 52

"Seminar of the Mining Institute of the Academy of Sciences on Mineral Dressing," I. I. Kurenkov

"Iz Ak Nauk, Otdel Tekh Nauk" No 2, pp 323-326

Seminar has been functioning under supervision of I. N. Plaksin, Corr Mem, Acad Sci USSR, since 1947. Brief review of activity for 1950 - 1951 is given, listing all scientific and tech reports delivered and discussed at sessions of seminar for that period.

212T99

PLAKSIN, I.N.

History of the development of assaying and modern methods of sampling and testing. Trudy po ist.tekh. no. 1:98-112 '52. (MLRA 6:7)
(Ores--Sampling and estimation)

PLAKSIN, I.N.; GLEMBOTSKIY, V.A.; OKOLOVICH, A.M.

Simultaneous use of several collector reagents for the intensification of the flotation of pyrite. Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk '52, 405-15. (MLRA 5:7)
(CA 47 no.22:12165 '53)

PLAKSIN, I.N., redaktor.

[Concentration of nonmetallic minerals by flotation; transactions of the conference on the theory and practice of flotation, Moscow, October, 1950] Obogashchenie nemetallicheskikh poleznykh iskopaemykh metodom flotatsii; trudy soveshchaniia po teorii i praktike flotatsionnogo obogashcheniia, Moskva, oktiabr' 1950 g. Moskva, Izd-vo Akademii nauk SSSR, 1952. 275 p. (MLRA 7:3)

1. Chlen-korrespondent Akademii nauk SSSR. 2. Akademiya nauk SSSR. Institut gornogo dela. (Flotation)

PLAKSIN, I. N.

184T16

USSR/Chemistry - Platinum, Flotation 11 Jun 51

"Effect of Various Gases on the Wettability of Platinum," I. N. Plaksin, Corr Mem, Acad Sci USSR, S. I. Vladimirov, Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin

"Dok Ak Nauk SSSR" Vol LXXVIII, No 5, pp 933-935

Oxygen increases wettability of platinum, while argon, nitrogen, and carbon dioxide do not. Prior contact of oxygen increases adsorption of sodium butyl xanthate on platinum, which is in agreement with hypothesis advanced by I. N. Plaksin that action of oxygen is essential for

184T16

USSR/Chemistry - Platinum, Flotation (Contd) 11 Jun 51

fixation of xanthate on surface of metal or metal sulfide.

184T16

PLAKSIN, I. N.

USSR/Mining - Mineral Dressing, Flotation — Jul 51

"Protective Action of Ammonium Salts During Flotation of Pyrite, Arsenpyrite and Other Sulfide Minerals in Lime Medium," I. N. Plaksin, Corr Mem, Acad Sci USSR, G. A. Myasnikova

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 7, pp 1046-1064

Establishes that ammonium salts promote flotation of pyrite, sphalerite, pyrrhotite and galenite and have no effect on arsenopyrite. Studies application of ammonium salts for selective flotation of concentrates contg pyrite and arsenopyrite, and

205T92

USSR/Mining - Mineral Dressing, Flotation (Contd) — Jul 51

establishes difference in effect of lime on flotability of same minerals. Ammonium salts in neutral medium have no effect on flotation of pyrite and arsenopyrite. Submitted 4 Nov 50.

(CA 47 no. 22: 12164 '53)

205T92

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200052-6

PLAKSIN, I. N.

185T85

USSR/Metals - Gold, Extraction Feb 51

"Oxidation-Reduction Processes During Cementation of Metals From Cyanide Solutions," I. N. Plaksin, Corr Mem, Acad Sci USSR, O. K. Budnikova, Moscow Inst Nonferrous Metals and Gold imeni M. I. Kalinin

"Iz Ak Nauk, Otdel Tekh Nauk," No 2, pp 267-272

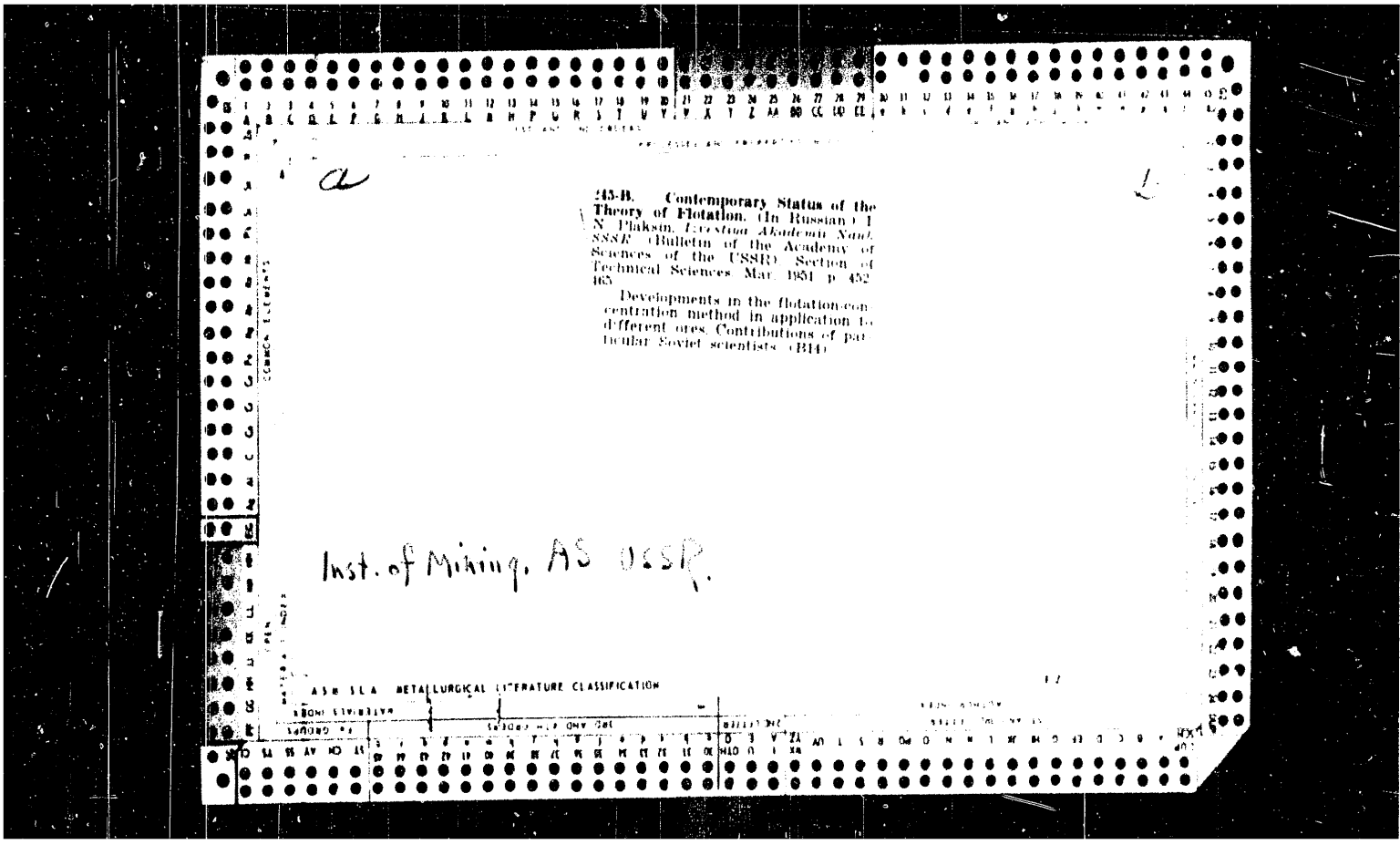
Expts for pptn of gold with metallic zinc showed small amt of dissolved oxygen (to 1 mg/l) does not hamper and even improves process. This factor, according to authors, was unknown to previous investigators and was not considered in industrial practice. Amts of oxygen in soln over 1 mg/l have

185T85

USSR/Metals - Gold, Extraction (Contd) Feb 51

detrimental effect on pptn by increasing amt of dissolved and oxidized zinc, causing unproductive consumption of ppt.

185T85

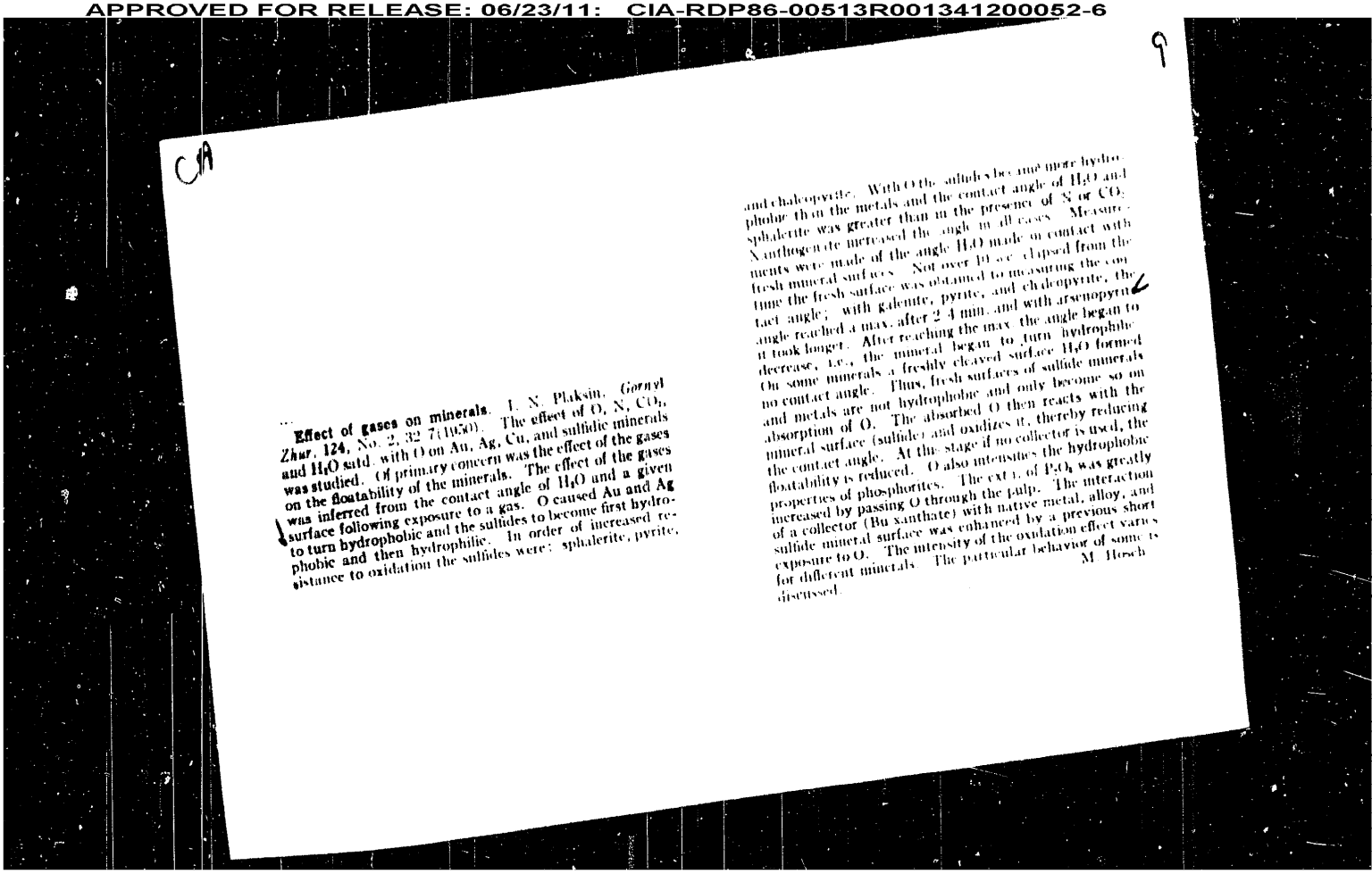


245-B. Contemporary Status of the Theory of Flotation. (In Russian.) I. N. Plakson. *Izvestiya Akademii Nauk SSSR* (Bulletin of the Academy of Sciences of the USSR) Section of Technical Sciences Mar. 1951 p. 452-465

Developments in the flotation-concentration method in application to different ores. Contributions of particular Soviet scientists. (BH)

Inst. of Mining, AS USSR.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



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Effect of gases on minerals. I. N. Plaksin, *Gornyi Zhur.*, **124**, No. 2, 32-7 (1950). The effect of O, N, CO_2, and H_2O satd. with O on Au, Ag, Cu, and sulfidic minerals was studied. Of primary concern was the effect of the gases on the floatability of the minerals. The effect of the gases was inferred from the contact angle of H_2O and a given surface following exposure to a gas. O caused Au and Ag to turn hydrophobic and the sulfides to become first hydrophobic and then hydrophilic. In order of increased resistance to oxidation the sulfides were: sphalerite, pyrite, and chalcopyrite. With O the sulfides became more hydrophobic than the metals and the contact angle of H_2O and sphalerite was greater than in the presence of N or CO_2. N anthogenate increased the angle in all cases. Measurements were made of the angle H_2O made on contact with fresh mineral surfaces. Not over 10 sec. elapsed from the time the fresh surface was obtained to measuring the contact angle; with galenite, pyrite, and chalcopyrite, the angle reached a max. after 2-4 min. and with arsenopyrite it took longer. After reaching the max. the angle began to decrease, i.e., the mineral began to turn hydrophilic. On some minerals a freshly cleaved surface H_2O formed no contact angle. Thus, fresh surfaces of sulfide minerals and metals are not hydrophobic and only become so on absorption of O. The absorbed O then reacts with the mineral surface (sulfide) and oxidizes it, thereby reducing the contact angle. At this stage if no collector is used, the floatability is reduced. O also intensifies the hydrophobic properties of phosphorites. The ext. of P_2O_5 was greatly increased by passing O through the pulp. The interaction of a collector (Bu xanthate) with native metal, alloy, and sulfide mineral surface was enhanced by a previous short exposure to O. The intensity of the oxidation effect varies for different minerals. The particular behavior of some is discussed.

M. Hosch

AM 165137

PLAKSIN, I. N.

1 May 50

USSR/Mining - Flotation
Pyrites

"Protective Action of Ammonium Compounds in the Flotation Separating of Pyrite and Arsenopyrite," I. N. Plaksin, S. A. Myasnikova, Mining Inst, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXII, No 1, pp 97-101

Tested three types of ammonium salts in flotation process. Used potassium ethyl xanthogenate as collector. Obtained best results for extracting arsenopyrite by using ammonium chloride. Clarified relations between lime and ammonium salts. Ammonium compounds prevent formation of lime film on surface of pyrite but have no such effect on arsenopyrite.

165137

C. A.

The role of lime and of the finely dispersed fraction in the flotation separation of some sulfide minerals I. N. Plaksin and A. M. Okolovich (Inst. Mining, and Moscow Inst Non ferrous Metals and Gold., Acad. Sci. U.S.S.R.) *Doklady Akad. Nauk U.S.S.R.* **71**, 305 6(1950). A discussion of flotation characteristics of pyrite and arsenopyrite. As a result of expts. made, it was established that by floating these two minerals in a lime soln. in presence of the usual reagents, after a preliminary activation by Cu sulfate, it is possible to sep. the two. This sepn. is possible because of the difference of the depressing influence of lime on the two minerals. The depressing of pyrite results from formation of insol. films of chem. reaction products on the surface of the mineral particles. Sorption effects predominate in the case of the effect of lime on arsenopyrite. The CaO content of the aq. part of the pulp should be within the limits of 0.020 to 0.040%. About 1 kg. of Cu sulfate per ton of original material is required for the activation. It was also found that the slimes having particles of size < 5 μ should be sepd. before selective flotation proceeds.

Gladys S. Macy

PLAKSIN, I. N.

168T58

USSR/Mining - Ores, Beneficiation Aug 50

"Devices for Concentration of Minerals by the Flotation-Granulation Method," I. N. Plaksin, Corr Mem Acad Sci USSR, I. I. Kurenkov, Inst of Mining, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 8, pp 1189-1197

Developed method and devices based on combination of gravity and flotation principles of mineral separation. Designed special concentration table. Air is fed from operational side of table surface. Established that preliminary processing of ores by contact, in form of aqueous pulp, with oxygen or air is considerably improved method.

168T58

158T41

USSR/Engineering - Ore Dressing
Flotation

Mar 50

"Influence of the Granulometric Characteristic on the Floatability of Zinc Blende," I. N. Plaksin, G. N. Khazhinskaya, T. F. Brovkina, Inst of Mining, Acad Sci USSR, $4\frac{1}{2}$ pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 3

Experiments have been conducted for flotation of finely crushed zinc-pyritic ore. Modification of mineral fineness from -100 to -200 mesh has very slight effect on flotation of activated zinc blende, but considerably increases extraction into foam product of zinc blende

[redacted]

158T41

USSR/Engineering - Ore Dressing (Contd)

Mar 50

which is not activated with copper sulfate. Further size decrease did not show any significant improvement of floatability. Experiments also demonstrated that lime does not supress zinc blende during flotation processing of very fine ore and even contributes to its flotation.

[redacted]

158T41

PLAKSIN, I. N.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200052-6

PLAKSIN, I. I.

158T69

USSR/Metals - Ore Dressing Feb 50

"Determination of the Coarseness of Dispersed Minerals During a Study of the Influence of Composition and Structure of Ores Upon Their Ability To Be Concentrated," I. I. Plaksin, Corr Mem, Acad Sci USSR, S. K. Shabarin, Inst of Mining Affairs, Acad Sci USSR, 5 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 2

Distribution of number of grains in ores versus their coarseness and weight can be employed to evaluate ability of ores to be concentrated, as shown for the case of gold ores. Submitted 26 Sep 49.

158T69

Enrichment of useful minerals by flotation granulation I. N. Plaksin and I. I. Kurenkov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* **1950**, 1189-97; cf. *C.A.* **44**, 87*f*. A method and app. based on a combination of gravitational and flotation principles of sepn. of minerals was proposed. The basic app. consisted of a concn. table. There were arrangements for feeding air, together with jets of water, into the table. Also the table was so constructed that gas could be fed from the sides of its working surface. It was possible to obtain the ore concentrates in both deslimed and non-deslimed form. It was found that preliminary treatment of the ore pulps with O or air considerably increased the grade of concentrates and the recovery of the useful minerals. Gladys S. Macy

PLAKSIN, I.N.

Role of gases and chemical interaction with reagents in flotation processes. Trudy Soveshchaniya Teorii Flotatsion. Obogashcheniya, Moscow '48, Rol' Gazov i Reagentov v Protsessakh Flotatsii '50, p. 32-56. (MLRA 3:11)
(CA 47 no.13:6319 '53)

PLASKIN, I. N.

12 to 15 May 1948, Moscow, First conference was held on history of Soviet chemistry, convened by Commission on the History of Chemistry, Acad Sci USSR. Many papers were presented by (ostensibly) members of this Commission.

"Role of Russian Chemists in Establishing Scientific Bases for the Metallurgical Industry (XVIII to XIX centuries)." (Mining Inst, Acad Sci USSR)

Materials on the History of Soviet Chemical Science," published by Acad Sci USSR in Moscow-Leningrad 1950.

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CA

7

Intensification of flotation granulation. I. N. Plaksin and I. I. Kurenkov. *Gornyĭ Zhur.* 123, No. 4, 34–5 (1949).—Flotation granulation consists of combining gravity concn. with flotation. Such condition is obtained when ore is tabled while air is supplied to the treated material. Some of the principles involved in tabling are discussed.

M. Hoseh

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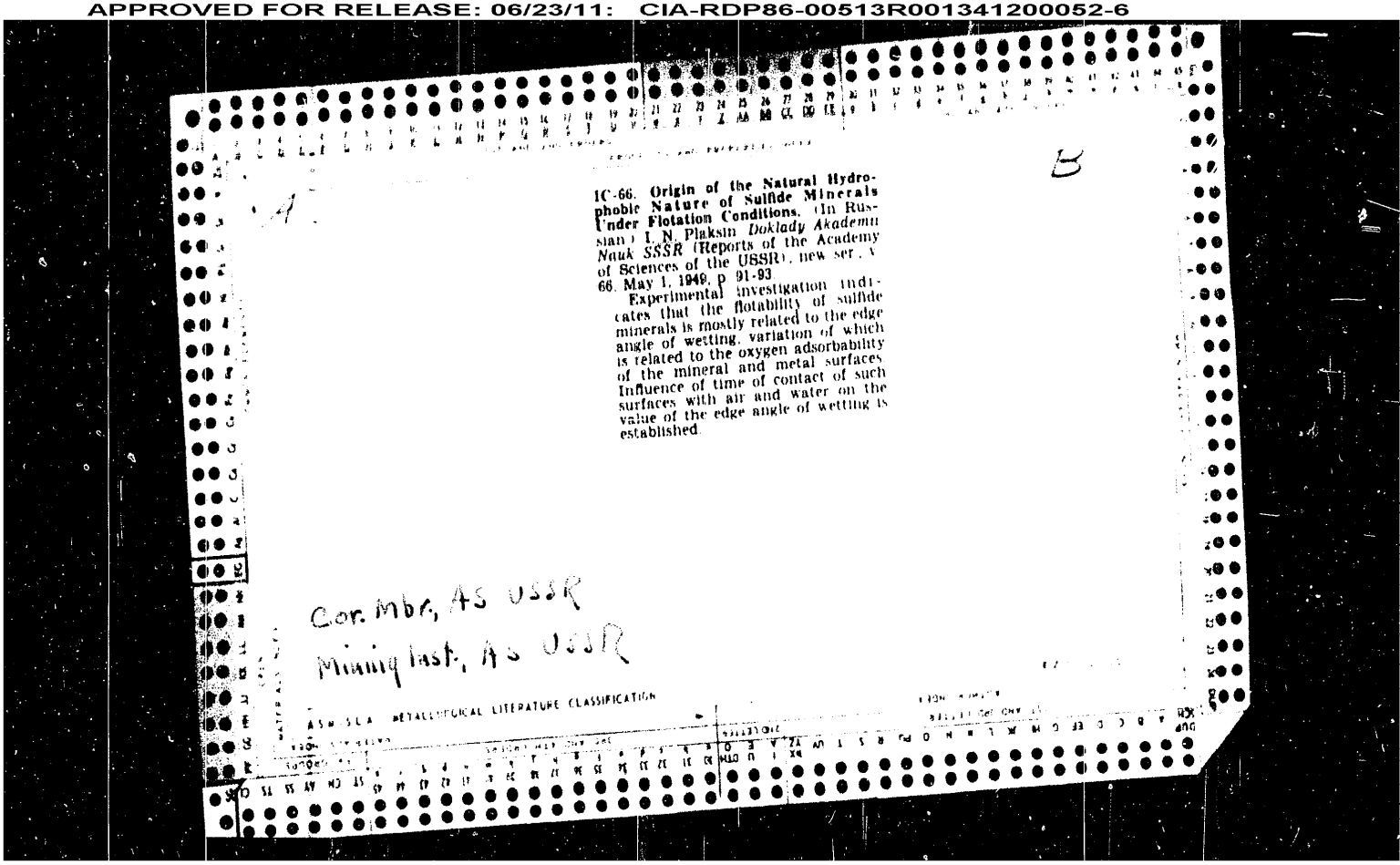
Central Siberia base for the production of ferrous and nonferrous metals. I. N. Plaksin and A. V. Troitskii. *Gornyi Zhur.* 123, No. 1, 5-8(1949).—Central Siberia has vast reserves of ores and other raw materials to support a large metallurgical industry. The Fe ores frequently contain Zn and the non-ferrous ores are polymetallic. For proper utilization of these ores it is essential to reduce the Zn in the Fe to a concn. where it would not affect the blast furnaces adversely; the Zn should be collected in concentrates for further treatment whereby the several values would be recovered to a max. The processing of placer deposits too should be improved to increase the recovery of Au, Sn, Hg, and other metals contained in these deposits. M. Hoseh

Effect of gases on the flotation of phosphorite ores. I. N. Plaksin and E. M. Dubrovskaya. *Doklady Akad. Nauk S.S.S.R.* **68**, 361-2 (1949). A discussion of results obtained from expts. on the flotation of phosphorite ores. The influence of atms. of different gases on the floatability of these minerals was studied. The expts. were carried out with a lab.-type flotation machine, modified in that it had a cover to prevent entrance of air and had devices at the side to supply air from below into the cell. The phosphorite ores were ground to a screen size of 100-270 mesh, deslimed, and dried previous to the flotation. The reagents used were Na_2CO_3, Na silicate, and tallow soap. Ratio of solids to liquid was maintained at 1:2.5. The pulps were stirred with reagents for 13 min. and the flotation required 3 min. In each case the expt. was first made without preliminary action of gases on the mineral surfaces. Then the pulps were treated separately with O, air, and N. The duration of satn. of pulps with the gases was varied from 3 to 75 min. Reagents were added after the gas was blown in. The gasification took place at a temp. of 18-20°, whereas the reagent mixing and flotation was carried out at 40-45°, because below 40° the soap used did not form a good froth. It was concluded from this work that practical flotation in a N atm. was not feasible. O gave the most noticeable increase in the recovery of P_2O_5. Air and N lowered the recovery of P_2O_5 in the concentrate. It was stated that the O molec. increased the hydrophobicity of the mineral surface and also caused an increase in the thickness of the sorption layer of the collector. Two graphs are provided, giving the percentage of P_2O_5 in the concentrate in relation to the duration of preliminary satn. of the pulps with the 3 different gases.

Gladys S. Macy



1C-66. **Origin of the Natural Hydrophobic Nature of Sulfide Minerals Under Flotation Conditions.** (In Russian) I. N. Plaksin *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v 66, May 1, 1949, p 91-93

Experimental investigation indicates that the flotability of sulfide minerals is mostly related to the edge angle of wetting, variation of which is related to the oxygen adsorbability of the mineral and metal surfaces. Influence of time of contact of such surfaces with air and water on the value of the edge angle of wetting is established.

Cor. Mbr, As USSR
Mining Inst., As USSR

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PLAKSIN, I. N.

Plaksin, I. N., and Bessonov, S. V., "Action of a Film of Xanthate on the Solubility of Gold and its Alloys in a Cyanide Solvent." Isvetnyye Metally, No 4, 1949.

PLAKSIN, I. N.

Plaksin, I. N., "Role of Oxygen and Other Gases in Flotation Processes for Dressing Ores." Kislorod, No 2, 1949.

CA

4

Influence of the natural composition and structure of zinc blendes on their floatability. I. N. Plaksin, G. N. Khazhinskaya, and T. F. Brovkina. *Izvest. Akad. Nauk U.S.S.R., Otel. Tekh. Nauk* 1949, 1361–4. In a previous report it was seen (cf. preceding abstr.) that in the case of flotation of zinc blendes there occurs a natural classification of them into those that are easily floated and those that are difficultly floated. The present report deals with the results of flotation tests made with zinc blend from 5 different deposits. The minerals to be tested were ground to −100 mesh (40–50%, −200 mesh). On the basis of the expts. made it was concluded that O activates zinc blende, interacting with the Fe sulfide in it. Graphs are used to show (1) mineral recovery vs. length of time of oxygenation of a zinc blende to which $CuSO_4$ was added and (2) mineral recovery vs. length of time of oxygenation without addn. of $CuSO_4$. A table gives the results of analyses of the zinc blendes for Zn, Cu, Fe, Pb, and insol. residue + silica.

Gladys S. Macy

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Effect of the sorption action of gases on the floatability of phosphorites. I. N. Plaksin and E. M. Dubinyvskaya (Acad. Sci. U.S.S.R.) *Izvest. Akad. Nauk U.S.S.R., Otdel. Tekh. Nauk* **1949**, 1040-7; cf. C.A., **44**, 3858g. In order to det. the effect of sorption of gases, the angle of contact between the mineral surface and the flotation medium was measured. The app. used was that of Plaksin and Bessonov. The polished section of phosphorite immediately after exposure of the surface was dipped into collector consisting of a 20% soln. of carboxylic acids in kerosene. After the given time of contact, the polished section was carefully removed from soln., rinsed with distd. water, dried in air for 3 min., and arranged for measurement of contact angle. The measurements took place in a stationary medium. Then expts. were made in which the phosphorite polished section was allowed to remain in the air for 1 to 4 hrs., the contact angle being measured at intervals of 1 hr. After remaining a given time in contact with air, the polished section was dipped into the aq. soln. of collector, washed in distd. water, dried, and the contact angle measured. It was concluded that air, without the influence of collector, promotes the hydrophobization of the surface of the phosphorite mineral. When the phosphorite surface sorbed collector without the influence of air, a 3-hr. period of contact with the collector was required for development of the max. contact angle (60°). However, after preliminary action of air on the mineral surface for 2 hrs. and subsequent contact of mineral with collector for 1 hr. the contact angle increased to 68°. Next the effect of the individual gases composing air was studied. For this expt. a special cell was used. This cell has been described by Plaksin and Bessonov. First a plate of phosphorite was placed in the cell. Then a drop of distd. water was carefully placed on the mineral surface, after which the contact angle was measured. Next the drop of water was removed by filter paper, and the cell hermetically sealed. Then the gas to be used was allowed to flow into the cell. After a definite time of contact with the gas the contact angle was again measured. Now flotation tests were carried out with phosphorite out of two classifications: 65–100 mesh and 100–150 mesh. In each case, 250 g. of ore was used for the test. Reagents used for all the tests were: 0.12 kg. ton of soda, 0.2 kg. ton of carboxylic acids, and 0.38 kg. ton of kerosene. The grade of concentrate increased by 3.5–7%, when the pulp was preliminarily treated with air. Tables of data are included in the report, as are graphs showing the relation between size of contact angle and the length of period of contact of mineral surface with collector.

Gladys S. Macy

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1951

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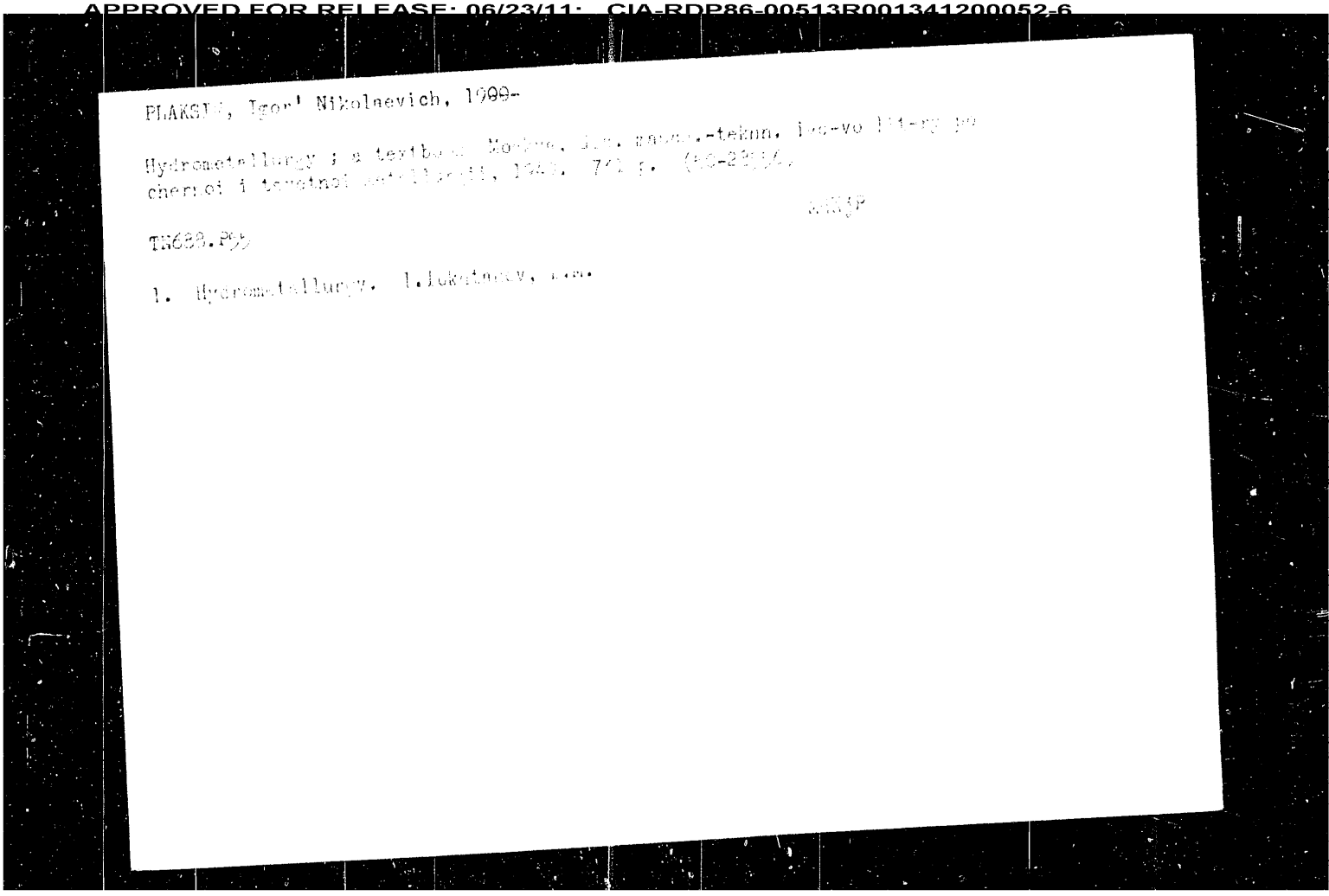
Depression of pyrite and arsenopyrite in flotation in an alkaline medium. I. N. Plaksin and A. M. Okolovich. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1949, 907-22. A report of studies concerning the influence of lime and NaOH on the flotation of pyrite and arsenopyrite and synthetic mixts. of the two minerals. All expts. were made with ore of two sizes: (1) −100 mesh and (2) −200 mesh. The following const. conditions were maintained: (1) time of mixing with reagent 15 min.; (2) collector K Et xanthate, input 100 g./ton; (3) frothing agent, pine oil, input 125 g./ton; (4) solid to liquid ratio, 1:3.6; and (5) time of flotation 10 min. After mixing the pulp with the reagents, samples of the liquid portion were removed for the following detns.: (1) detn. of content of sol. CaO by titration with standard oxalic acid and (2) potentiometric detn. of pH of the medium with antimony and calomel electrodes. It was found that in cases where the effect of the alkali appeared to be chiefly a result of sorption lime shows considerably greater influence than does caustic soda. However, when the depression is a consequence of formation of a deposit on the mineral particles, large differences are not observed. The speed of formation of films and their formation directly on the mineral surface increases their stability. Lined films showed less stability than films formed by the action of caustic soda. It was established that the high activity of lime appears to be a result of activity of the Ca ion which is involved in formation of films on the mineral surface. Addn. of copper sulfate to the pulp caused an increase in flotation capacity of arsenopyrite in lime medium. The expts. are illustrated by graphs showing relation of percentage recovery of sulfide mineral to the amt. of NaOH or CaO added to the pulp. Gladys S. Macy

CA

Kinetics of the precipitation of metals from solutions and its application to the theory of hydrometallurgical processes. I. N. Plaksin and N. A. Suvorovskaya (Moskov. Inst. Tsvetnykh Metallov i Zolota im M. I. Kalinina). *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1940, 497–12.—Pptn. of Au by Zn from a soln. contg. 2.5 g. Au/ton, NaCN 0.05, 0.135, 0.20%, at ~20°, is accompanied by evolution of H_2 (in 24 hrs., 0.7455, 3.3550, 3.4138 cc. H_2, resp., for 0.0057, 0.0162, 0.0115% Zn dissolved), indicating H_2 polarization of the Zn. In the presence of H_2O_2, 0.06 g.-equiv. 1 l., as depolarizer, the reaction (decrease of the amt. of Au in soln. from an initial 2.6 g./ton) in 0.00% NaCN is of the 1st order, with the rate const. k = 0.0564 min.$^{-1}$/sq. cm./ml., at ~20° (up to 150 mm., Au down to 2.0 g./ton). For the pptn. of Cu by Fe, from a $CuSO_4$ soln. of an initial concn. of ~2.9 g. Cu/l., in the presence of H_2SO_4 0.133, 0.266, 0.655 g./l., the 1st-order k = 0.11, 0.23, 0.21 mm.$^{-1}$ sq. cm./ml., at 25°. The role of diffusion is demonstrated by the effect of stirring, thus, without stirring and with 200 and 300 r.p.m., k = 0.016, 0.20, and 0.396. There is no visible evolution of H_2, and the concn. of O_2 falls from ~10 to ~6 mg./l. during the 1st 45 min., and then remains const. N. Thon



PLAKSIN, Igor' Nikolaevich, 1909-

Hydrometallurgy i a textbook. Moskva, Izd. vses. zaoch.-tekhn. in-ta tsvet. [illegible]
chermet i tsvetnoi [illegible], 1963. 74[illegible] p. (50-23[illegible]

TN688.P55

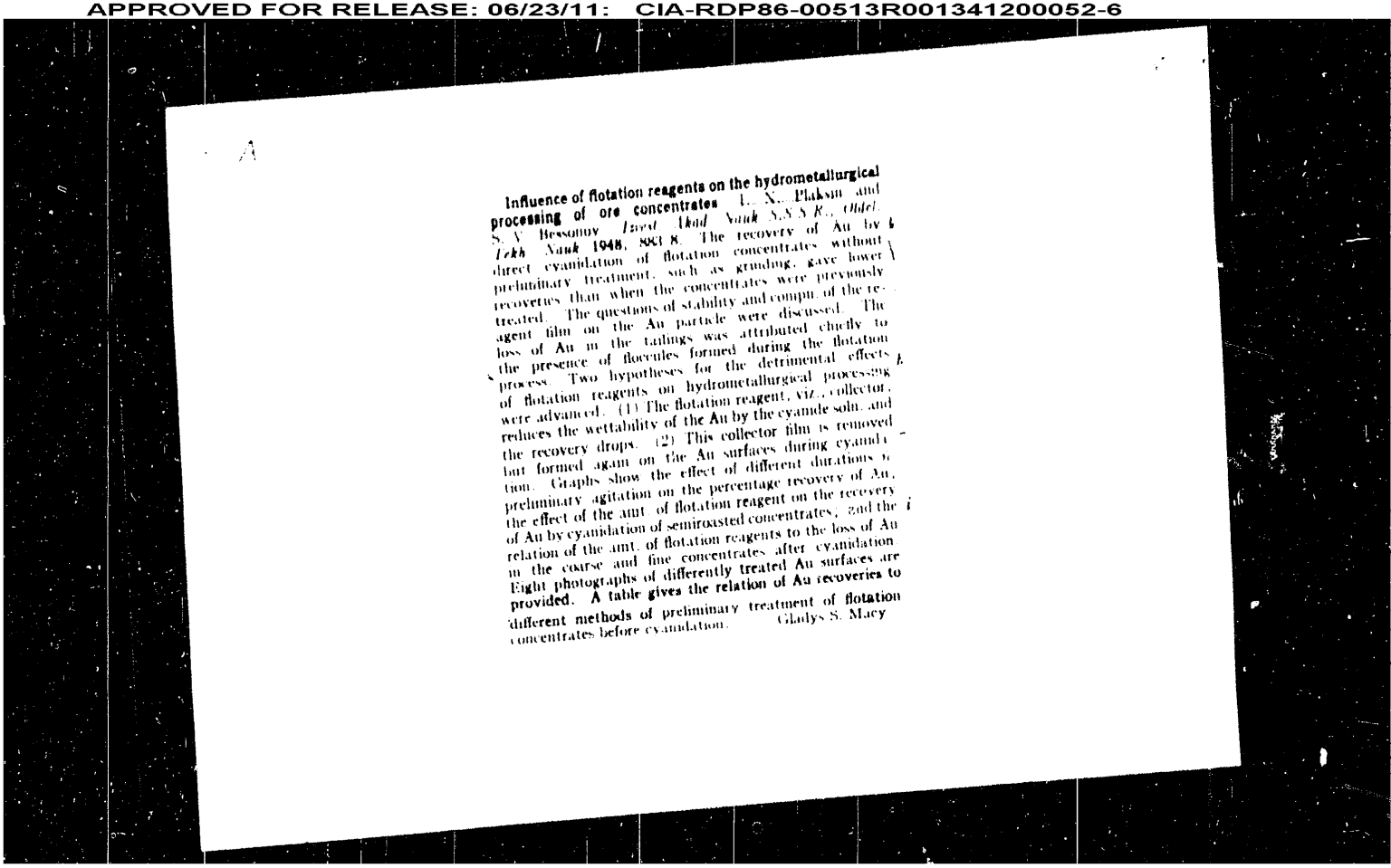
1. Hydrometallurgy. I.Iukhanova, [illegible].

CA

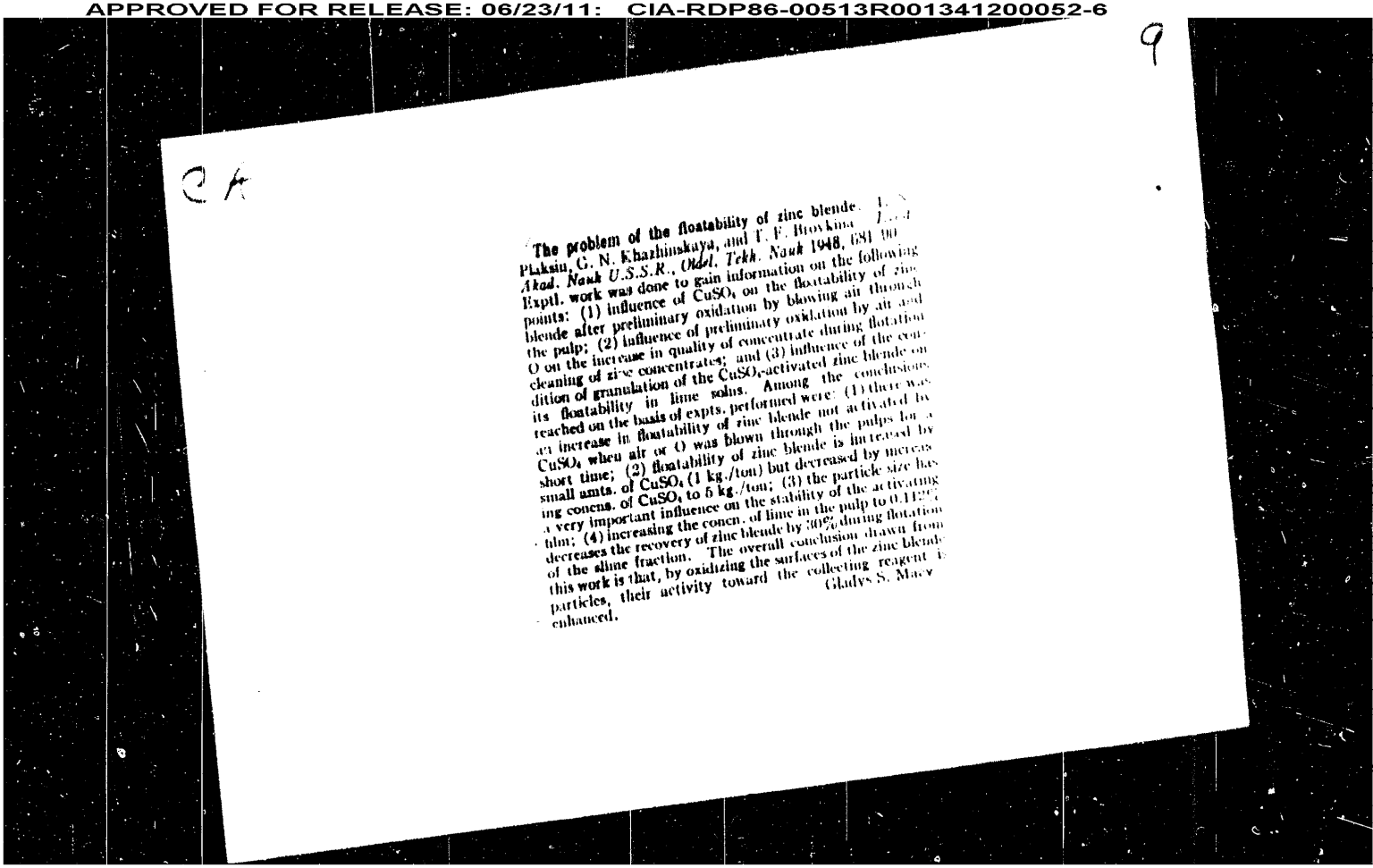
9

Role of oxygen and other gases in the flotation phenomena. I. N. Plaksin and S. V. Bessonov (Inst. Mining Acad. Sci. U.S.S.R.). *Izvest. Akad. Nauk U.S.S.R., Otdel. Tekh. Nauk* 1948, 1773-88. The mechanism of the action of O on mineral surfaces was studied. The chief method of investigation was the measurement of contact angles; the method developed by Rebinder and his co-workers was used. It is believed by P. and B. that contact angle measurements offer the possibility of estg. the alteration of the solid surface occurring as a result of adsorption of surface-active substances on it. Also, it is stated that if the contact angle on a mineral surface increases (by increasing the concn. of collector, time of contact, or adsorption of gas), then the flotation activity of such a surface improves. In the method used by P. and B. the contact angle was measured by projecting onto a screen the image of a drop resting on a mineral surface, and measuring the angle of contact directly. In rare instances the reproducibility of the angle obtained is ± 5°, but in most cases it is 1-2°. For the expts. the metal surfaces used were electrolytic Au and Ag. These metals were formed into cylindrical tablets of 8 mm. diam. and 0.5 mm. thick. Then the minerals, pyrite, galena, and arsenopyrite were also studied. For exposure of the mineral surface, the method of polishing (under a layer of distd. water) was adopted. Time of polishing in all cases was 2 min. After polishing, the surface was washed with alc., then with distd. water. On the basis of results obtained from the measurements made it is concluded that O (from the air or dissolved in water) does adsorb on metal surfaces. This was assumed to occur in the following steps: (1) phys. adsorption of gas, (2) activation of adsorption, and (3) fixation of O on the surface with formation of O film (chemosorption), and then (4) considerable oxidation of the surface with formation of an oxide film. Besides O, other gases used in the expts. were N and CO_2. Several tables and graphs give the relation between size of contact angle and length of time of contact. Photographs of the app. used are given.

Gladys S. Macy



Influence of flotation reagents on the hydrometallurgical processing of ore concentrates I. N. Plaksin and S. V. Bessonov *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* **1948**, 887-8. The recovery of Au by direct cyanidation of flotation concentrates without preliminary treatment, such as grinding, gave lower recoveries than when the concentrates were previously treated. The questions of stability and compn. of the reagent film on the Au particle were discussed. The loss of Au in the tailings was attributed chiefly to the presence of floccules formed during the flotation process. Two hypotheses for the detrimental effects of flotation reagents on hydrometallurgical processing were advanced. (1) The flotation reagent, viz., collector, reduces the wettability of the Au by the cyanide soln. and the recovery drops. (2) This collector film is removed but formed again on the Au surfaces during cyanidation. Graphs show the effect of different durations of preliminary agitation on the percentage recovery of Au, the effect of the amt. of flotation reagent on the recovery of Au by cyanidation of semiroasted concentrates, and the relation of the amt. of flotation reagents to the loss of Au in the coarse and fine concentrates after cyanidation. Eight photographs of differently treated Au surfaces are provided. A table gives the relation of Au recoveries to different methods of preliminary treatment of flotation concentrates before cyanidation. Gladys S. Macy

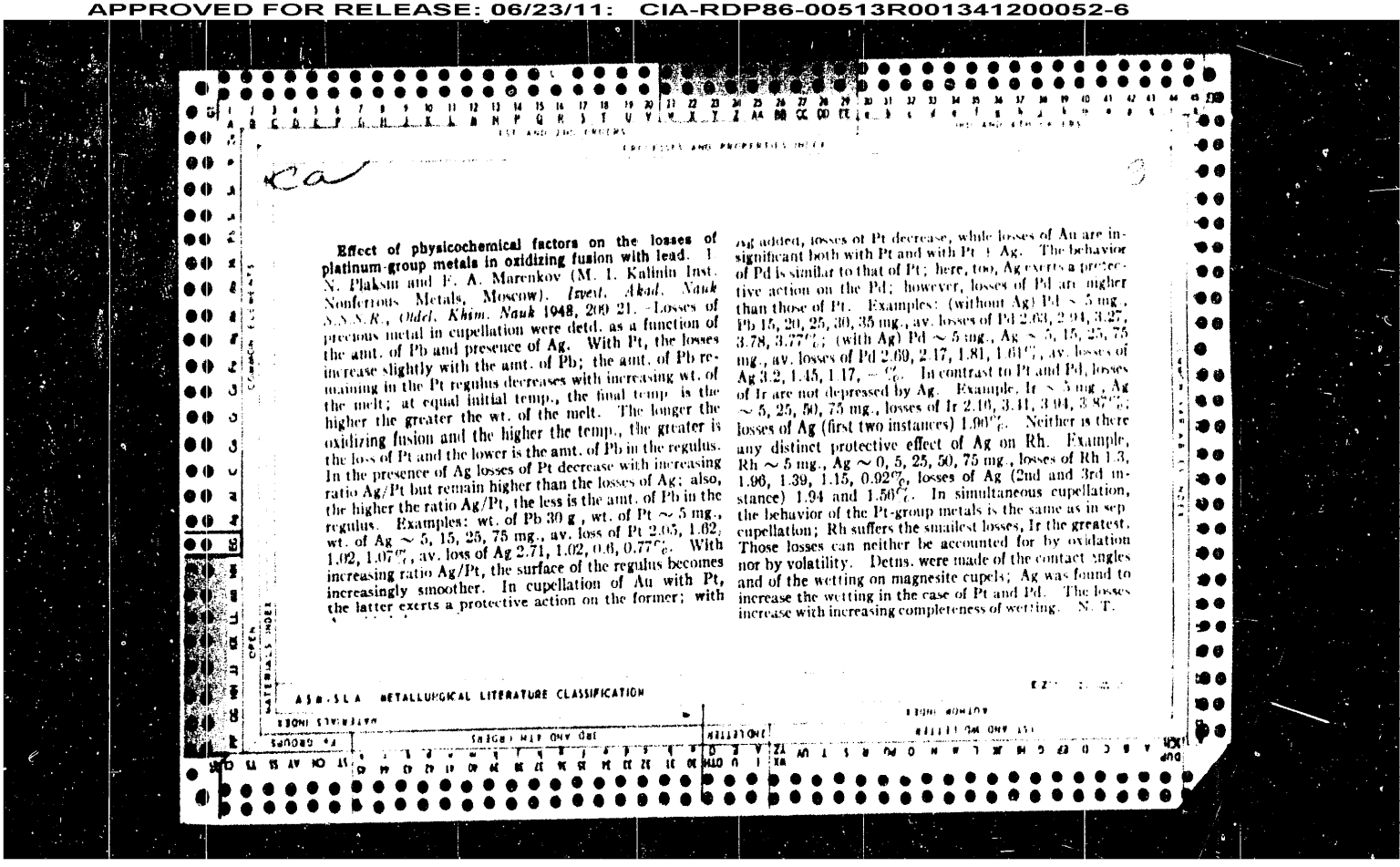


9

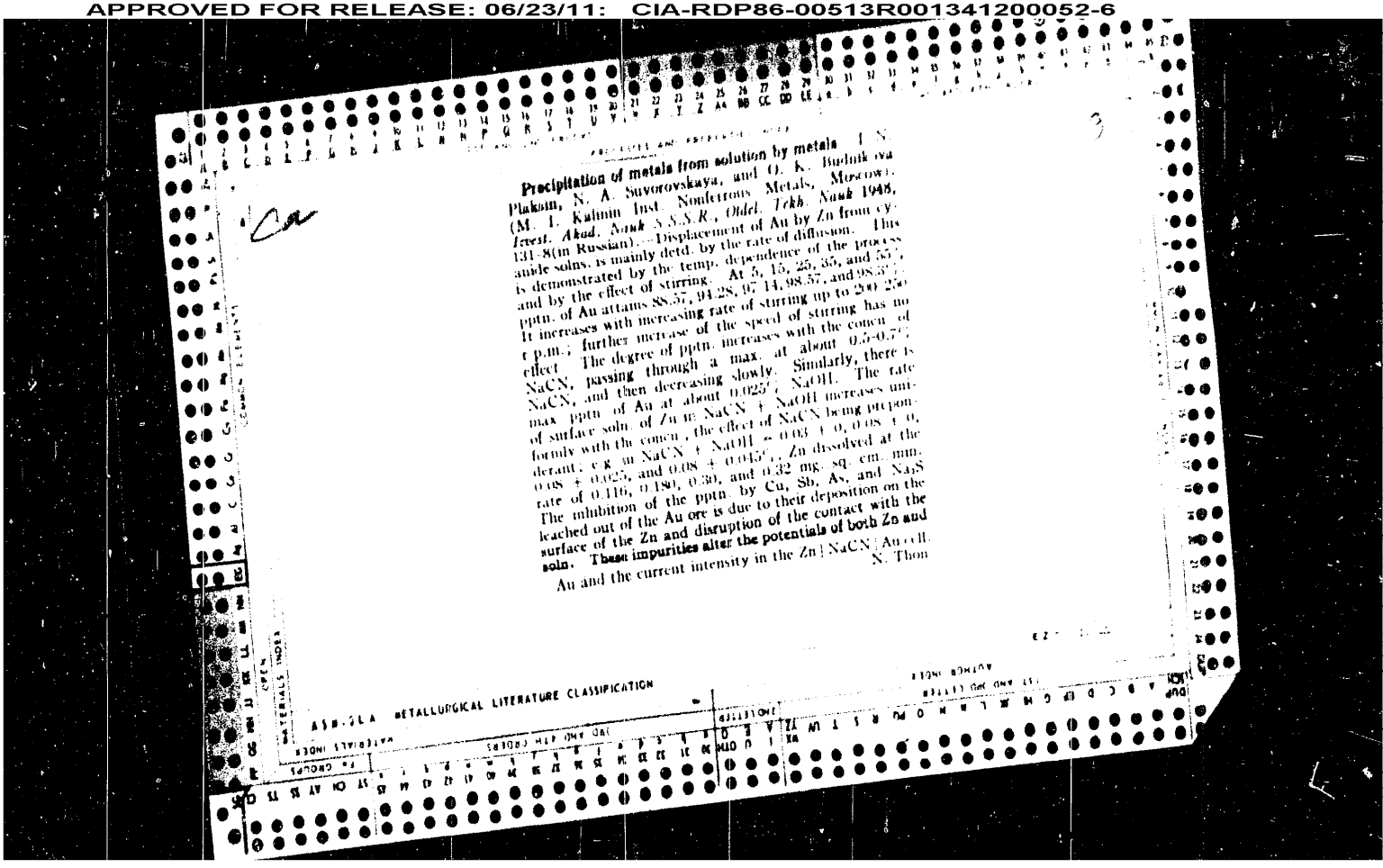
C A

The problem of the floatability of zinc blende. I. V. Plaksin, G. N. Khazhinskaya, and T. F. Brovkina. *Izvest. Akad. Nauk U.S.S.R., Otdel. Tekh. Nauk* **1948**, 681-90. Exptl. work was done to gain information on the following points: (1) influence of $CuSO_4$ on the floatability of zinc blende after preliminary oxidation by blowing air through the pulp; (2) influence of preliminary oxidation by air and O on the increase in quality of concentrate during flotation cleaning of zinc concentrates; and (3) influence of the condition of granulation of the $CuSO_4$-activated zinc blende on its floatability in lime solns. Among the conclusions reached on the basis of expts. performed were: (1) there was an increase in floatability of zinc blende not activated by $CuSO_4$ when air or O was blown through the pulps for a short time; (2) floatability of zinc blende is increased by small amts. of $CuSO_4$ (1 kg./ton) but decreased by increasing concns. of $CuSO_4$ to 5 kg./ton; (3) the particle size has a very important influence on the stability of the activating film; (4) increasing the concn. of lime in the pulp to 0.112% decreases the recovery of zinc blende by 30% during flotation of the slime fraction. The overall conclusion drawn from this work is that, by oxidizing the surfaces of the zinc blende particles, their activity toward the collecting reagent is enhanced.

Gladys S. Macy



Effect of physicochemical factors on the losses of platinum-group metals in oxidizing fusion with lead. I. N. Plaksin and F. A. Marenkov (M. I. Kalinin Inst. Nonferrous Metals, Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1948, 209-21.—Losses of precious metal in cupellation were detd. as a function of the amt. of Pb and presence of Ag. With Pt, the losses increase slightly with the amt. of Pb; the amt. of Pb remaining in the Pt regulus decreases with increasing wt. of the melt; at equal initial temp., the final temp. is the higher the greater the wt. of the melt. The longer the oxidizing fusion and the higher the temp., the greater is the loss of Pt and the lower is the amt. of Pb in the regulus. In the presence of Ag losses of Pt decrease with increasing ratio Ag/Pt but remain higher than the losses of Ag; also, the higher the ratio Ag/Pt, the less is the amt. of Pb in the regulus. Examples: wt. of Pb 30 g., wt. of Pt ~ 5 mg., wt. of Ag ~ 5, 15, 25, 75 mg., av. loss of Pt 2.05, 1.62, 1.02, 1.07%, av. loss of Ag 2.71, 1.02, 0.6, 0.77%. With increasing ratio Ag/Pt, the surface of the regulus becomes increasingly smoother. In cupellation of Au with Pt, the latter exerts a protective action on the former; with Ag added, losses of Pt decrease, while losses of Au are insignificant both with Pt and with Pt + Ag. The behavior of Pd is similar to that of Pt; here, too, Ag exerts a protective action on the Pd; however, losses of Pd are higher than those of Pt. Examples: (without Ag) Pd ~ 5 mg., Pb 15, 20, 25, 30, 35 mg., av. losses of Pd 2.63, 2.94, 3.27, 3.78, 3.77%; (with Ag) Pd ~ 5 mg., Ag ~ 5, 15, 25, 75 mg., av. losses of Pd 2.69, 2.17, 1.81, 1.61%, av. losses of Ag 3.2, 1.45, 1.17, —%. In contrast to Pt and Pd, losses of Ir are not depressed by Ag. Example, Ir ~ 5 mg., Ag ~ 5, 25, 50, 75 mg., losses of Ir 2.10, 3.41, 3.94, 3.87%; losses of Ag (first two instances) 1.90%. Neither is there any distinct protective effect of Ag on Rh. Example, Rh ~ 5 mg., Ag ~ 0, 5, 25, 50, 75 mg., losses of Rh 1.3, 1.96, 1.39, 1.15, 0.92%, losses of Ag (2nd and 3rd instance) 1.94 and 1.56%. In simultaneous cupellation, the behavior of the Pt-group metals is the same as in sep cupellation; Rh suffers the smallest losses, Ir the greatest. Those losses can neither be accounted for by oxidation nor by volatility. Detns. were made of the contact angles and of the wetting on magnesite cupels; Ag was found to increase the wetting in the case of Pt and Pd. The losses increase with increasing completeness of wetting. N. T.



Precipitation of metals from solution by metals. I. N. Plakuin, N. A. Suvorovskaya, and O. K. Budnik-va (M. I. Kalinin Inst. Nonferrous Metals, Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1948, 131-8(in Russian).—Displacement of Au by Zn from cyanide solns. is mainly detd. by the rate of diffusion. This is demonstrated by the temp. dependence of the process and by the effect of stirring. At 5, 15, 25, 35, and 55°, pptn. of Au attains 88.57, 94.28, 97.14, 98.57, and 98.57%. It increases with increasing rate of stirring up to 200–250 r.p.m.; further increase of the speed of stirring has no effect. The degree of pptn. increases with the concn. of NaCN, passing through a max. at about 0.5–0.7% NaCN, and then decreasing slowly. Similarly, there is max. pptn. of Au at about 0.025% NaOH. The rate of surface soln. of Zn in NaCN + NaOH increases uniformly with the concn., the effect of NaCN being preponderant; e.g. in NaCN + NaOH = 0.03 + 0, 0.08 + 0, 0.08 + 0.025, and 0.08 + 0.045%, Zn dissolved at the rate of 0.116, 0.180, 0.30, and 0.32 mg. sq. cm. min. The inhibition of the pptn. by Cu, Sb, As, and Na$_2$S leached out of the Au ore is due to their deposition on the surface of the Zn and disruption of the contact with the soln. These impurities alter the potentials of both Zn and Au and the current intensity in the Zn | NaCN | Au cell. N. Thon

PA40T69

USSR/Metallurgy
Ore Dressing
Oxide Layers

Oct 1947

"Oxidization and Reduction of Mineral Surfaces during Process of Dressing and Hydrometallurgical Processing of Ore," I. N. Plaksin, Corresponding Member, Academy of Sciences of USSR, 10 pp

"Izv Akad Nauk SSSR, Otdel Tekh Nauk" No 10

Discusses various aspects of subject. Explains interrelationship between minerals and reagents, effect of oxidization and reduction of the surfaces of native ores on amalgamation, effect of oxidization of sulfide minerals on flotation, oxidization of native

40T69

USSR/Metallurgy (Contd) Oct 1947

metals and sulfide minerals in hydrometallurgical processes. Article is very general, but does contain some information in regard to some of the scientists who have been involved with the various processes mentioned.

40T69

PLAKSIN, I. N.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200052-6

PLAKSIN, I. N. PA 9T102

USSR/Flotation
Minerals

Apr 1947

"The Effect of Oxidation on Floatability and Segregation of Sulfide Minerals," I. N. Plaksin, A. I. Sinelnikova, G. N. Khazhinskaya, 14 pp

"Izv Ak Nauk Tekh Nauk" No 4

The influence of weakly-acid and neutral mediums (pH<7). Chemical changes of composition in the surface of the minerals, proceeding from the action of oxidation. Influence of hydrogen on the medium and structure of crystalline lattices of sulfide minerals. Tables and graphs showing relationships of the various factors.

9T102

PLAKSIN, I. N.

PA 16T104

USSR/Flotation
Sulfides

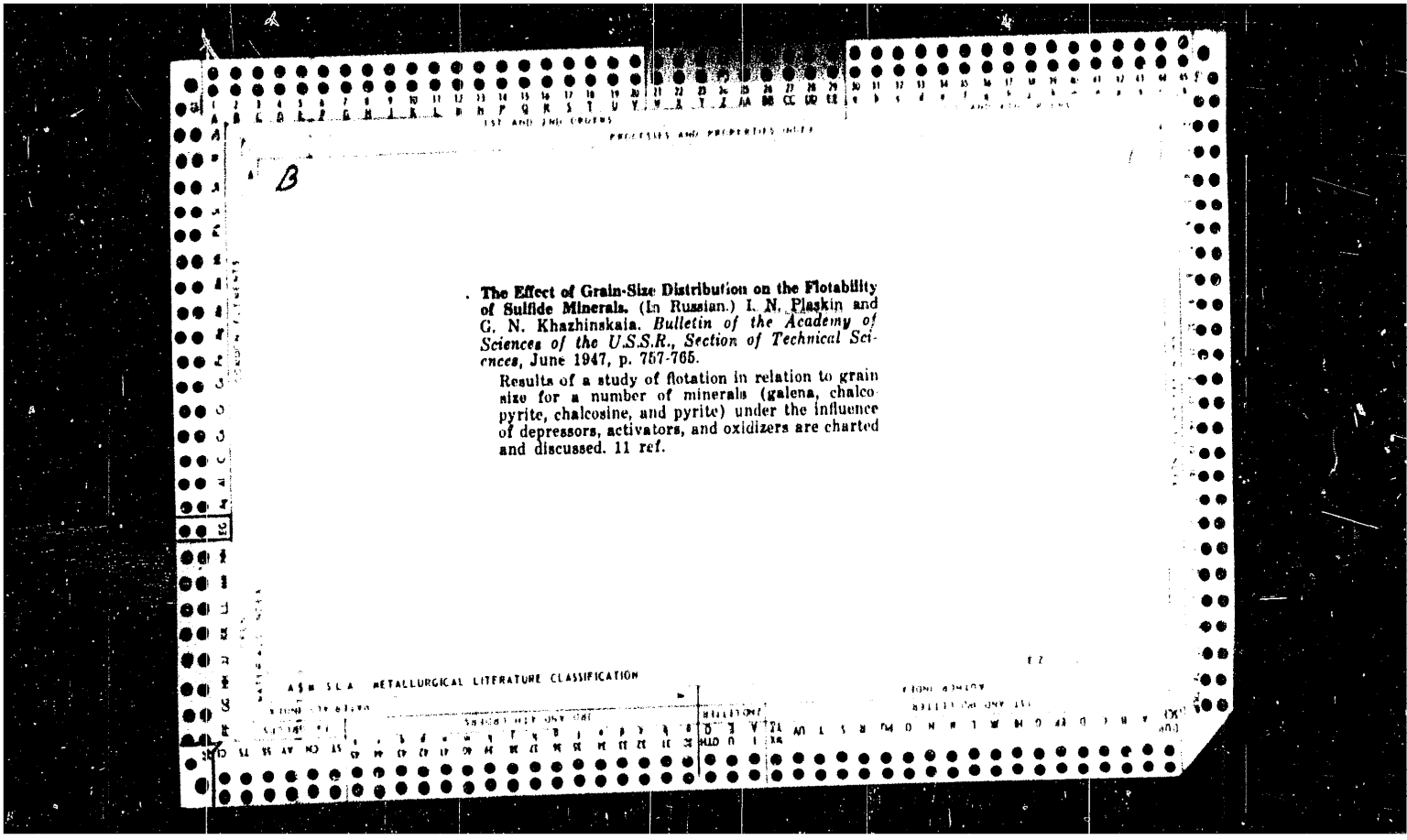
May/Jun 1947

"Oxidation in Alkalis by Selective Flotation of Sulphide Ore," I. N. Plaksin, A. I. Sinel'nikova, G. N. Khazhinskaya, Mining Institute, Academy of Sciences, USSR, 5 pp

"Tsvetnyye Metally" No 3

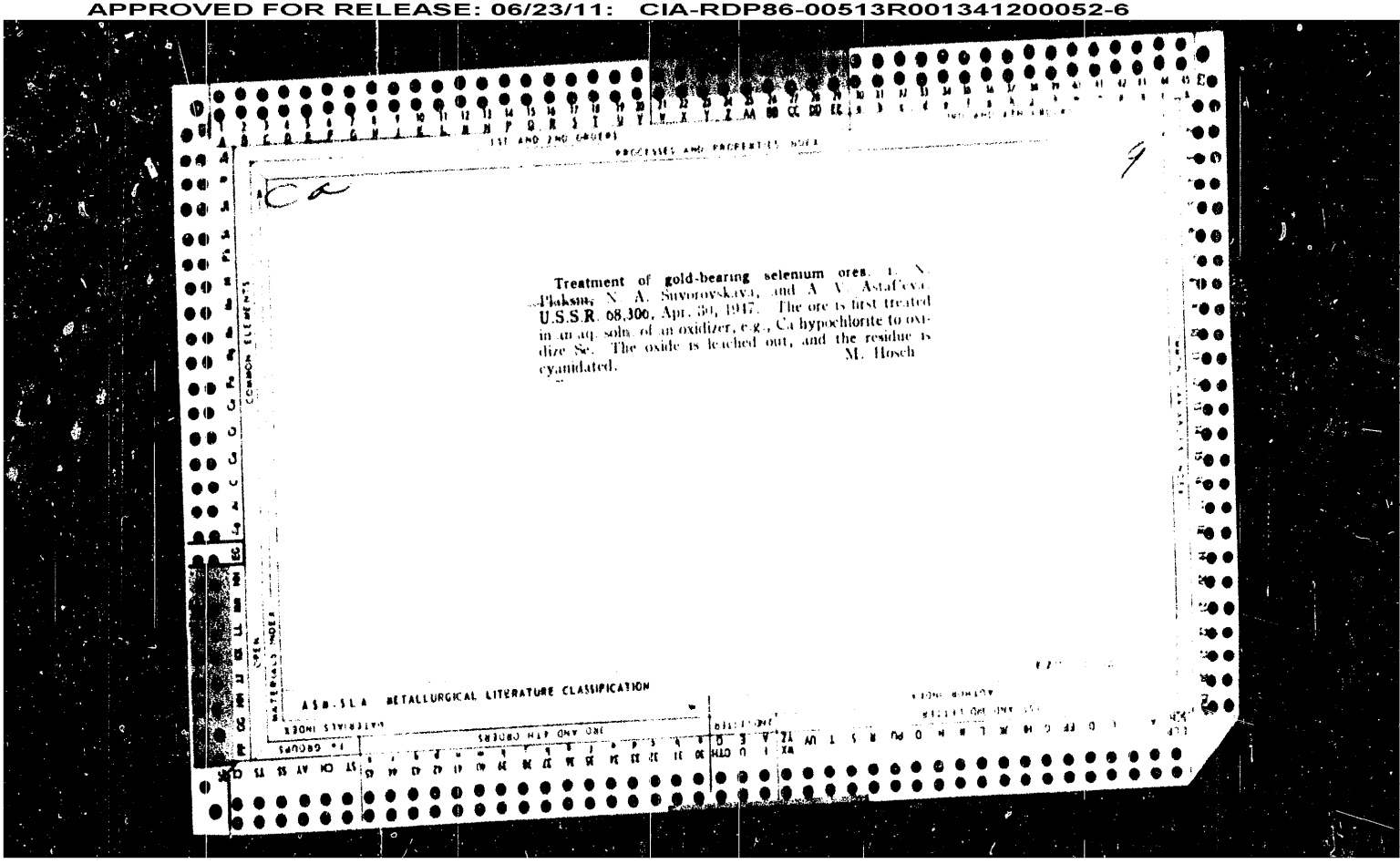
Discusses the processes with following conclusions: (1) Preliminary aeration or oxidation of pulp prior to flotation results in increase of selectivity during flotation of copper pyrite ore. (2) Use of aeration or blowing through of acids makes it possible to determine the quality of Zn or Cu concentrate during the purifying flotation.

16T104



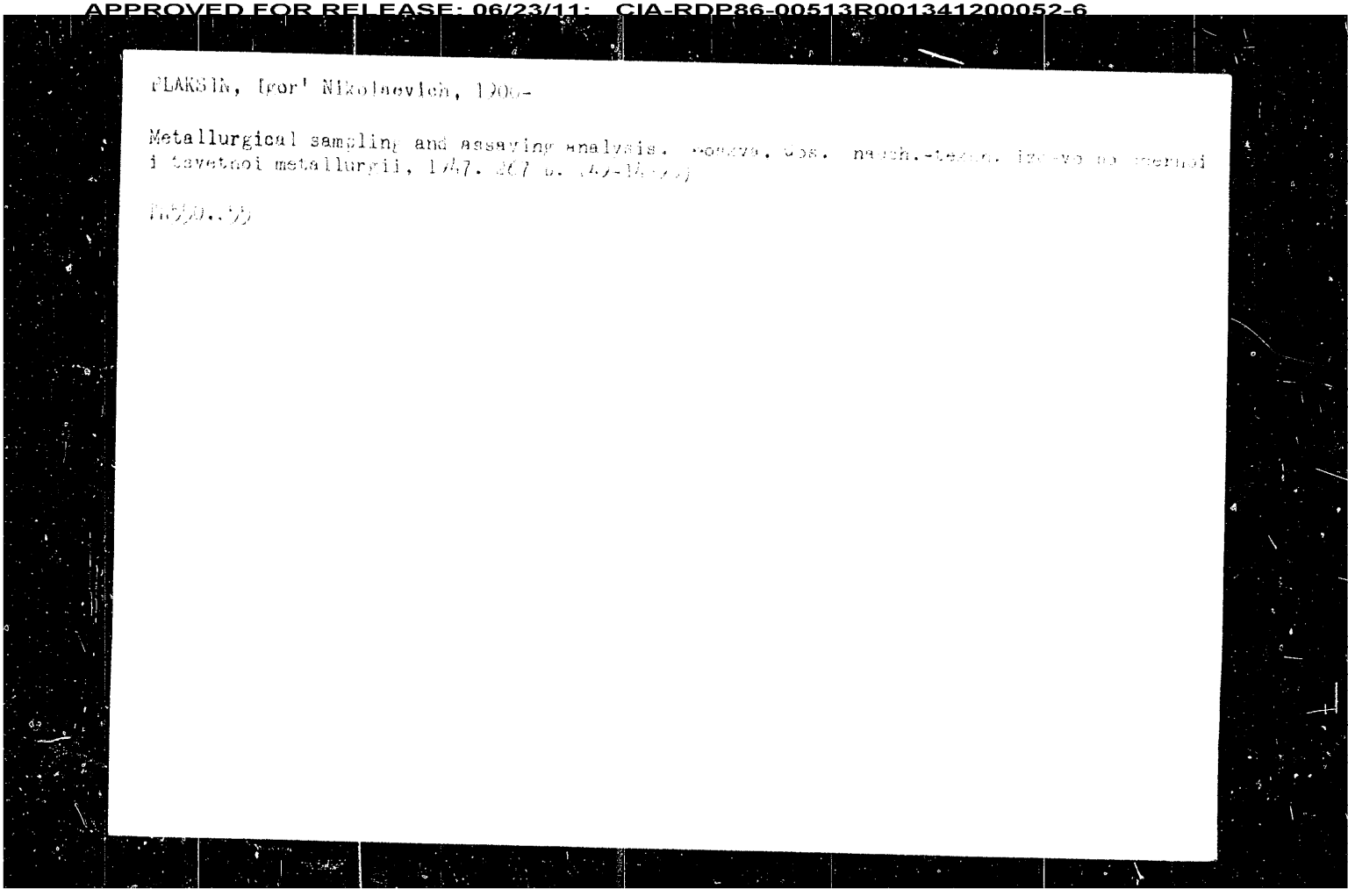
The Effect of Grain-Size Distribution on the Flotability of Sulfide Minerals. (In Russian.) I. N. Plaskin and G. N. Khazhinskaia. *Bulletin of the Academy of Sciences of the U.S.S.R., Section of Technical Sciences*, June 1947, p. 757-765.

Results of a study of flotation in relation to grain size for a number of minerals (galena, chalcopyrite, chalcosine, and pyrite) under the influence of depressors, activators, and oxidizers are charted and discussed. 11 ref.



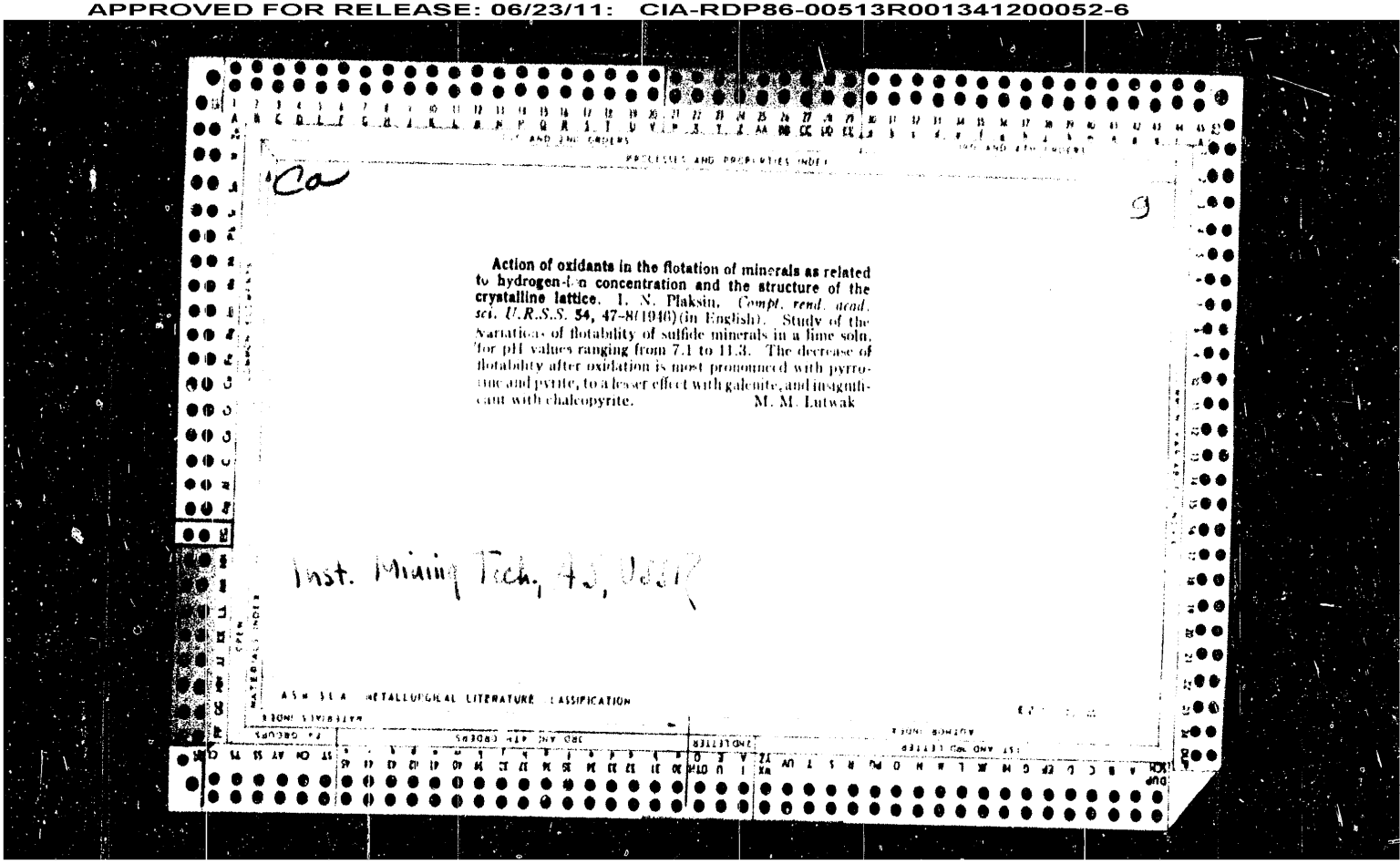
Treatment of gold-bearing selenium ores. I. N. Plaksin, N. A. Suvorovskaya, and A. V. Astaf'eva. U.S.S.R. 68,300, Apr. 30, 1947. The ore is first treated in an aq. soln. of an oxidizer, e.g., Ca hypochlorite to oxidize Se. The oxide is leached out, and the residue is cyanidated.

M. Hosch



PLAKSIN, Igor' Nikolaevich, 1906-

Metallurgical sampling and assaying analysis. Moskva, Gos. nauch.-tekhn. izd-vo po chernoi i tsvetnoi metallurgii, 1947. 207 p. (47-17???)



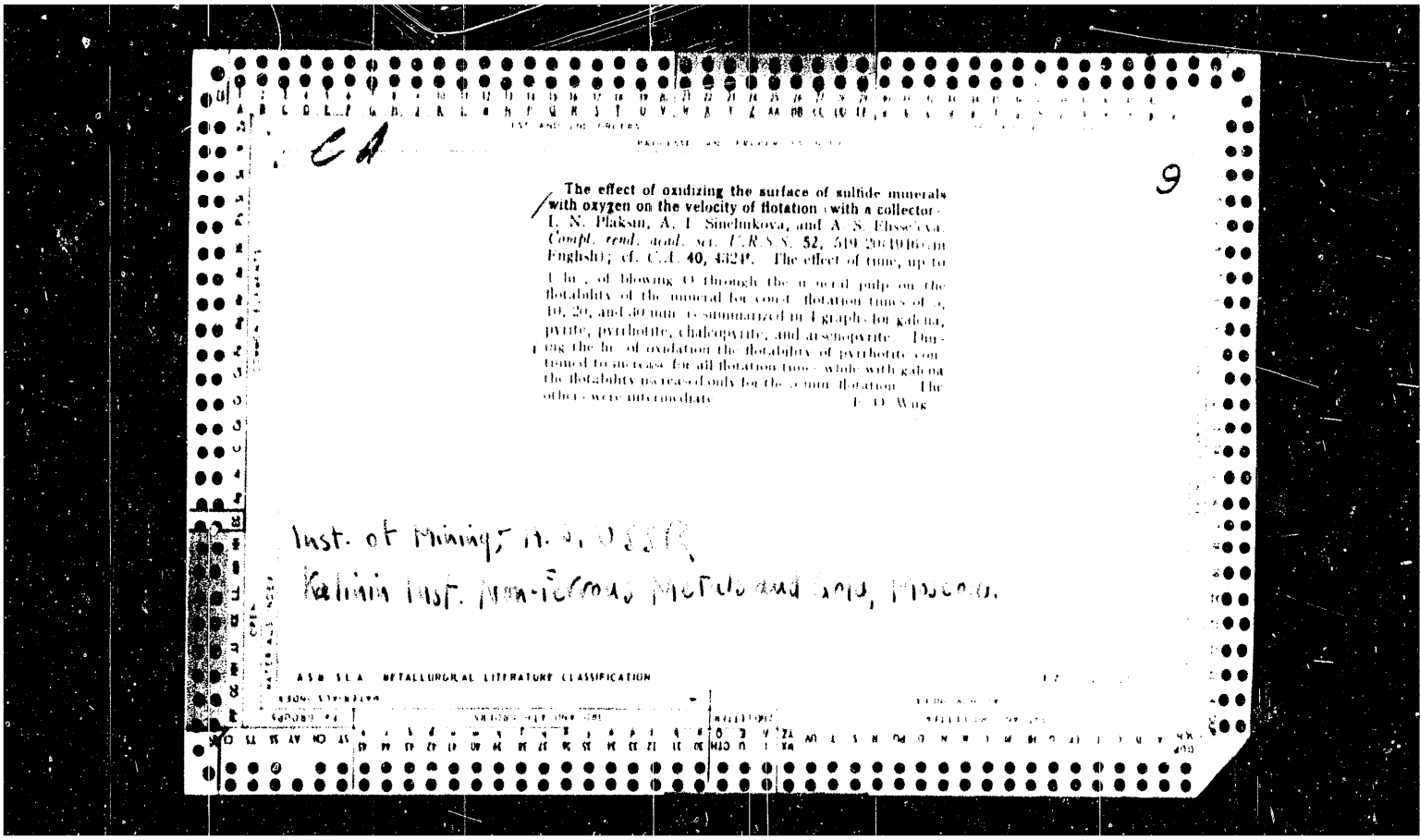
Ca

9

Action of oxidants in the flotation of minerals as related to hydrogen-ion concentration and the structure of the crystalline lattice. I. N. Plaksin. *Compt. rend. acad. sci. U.R.S.S.* **54**, 47–8(1946)(in English). Study of the variations of flotability of sulfide minerals in a lime soln. for pH values ranging from 7.1 to 11.3. The decrease of flotability after oxidation is most pronounced with pyrrotine and pyrite, to a lesser effect with galenite, and insignificant with chalcopyrite. M. M. Lutwak

Inst. Mining Tech., Acad. Sci. U.S.S.R.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

9

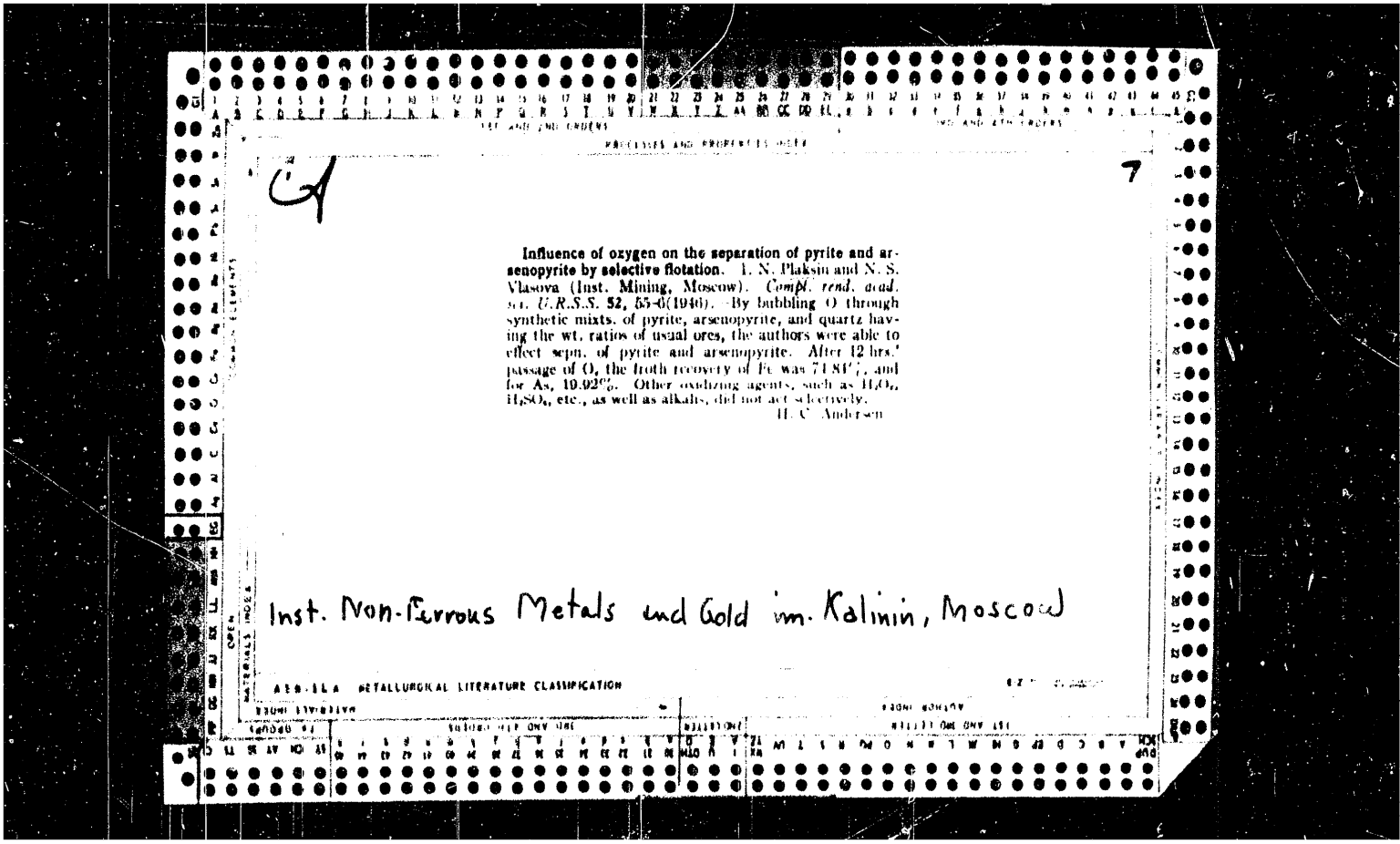
The effect of oxidizing the surface of sulfide minerals with oxygen on the velocity of flotation (with a collector)

I. N. Plaksin, A. I. Smelnikova, and A. S. Elsner'eva. *Compt. rend. acad. sci. U.R.S.S.* **52**, 549-50(1946) (in English); cf. *C.A.* **40**, 4324⁸. The effect of time, up to 1 hr., of blowing O through the mineral pulp on the flotability of the mineral for const. flotation times of 5, 10, 20, and 40 min. is summarized in 4 graphs for galena, pyrite, pyrrhotite, chalcopyrite, and arsenopyrite. During the first of oxidation the flotability of pyrrhotite continued to increase for all flotation times, while with galena the flotability increased only for the 5-min. flotation. The others were intermediate.

P. O. Wyk

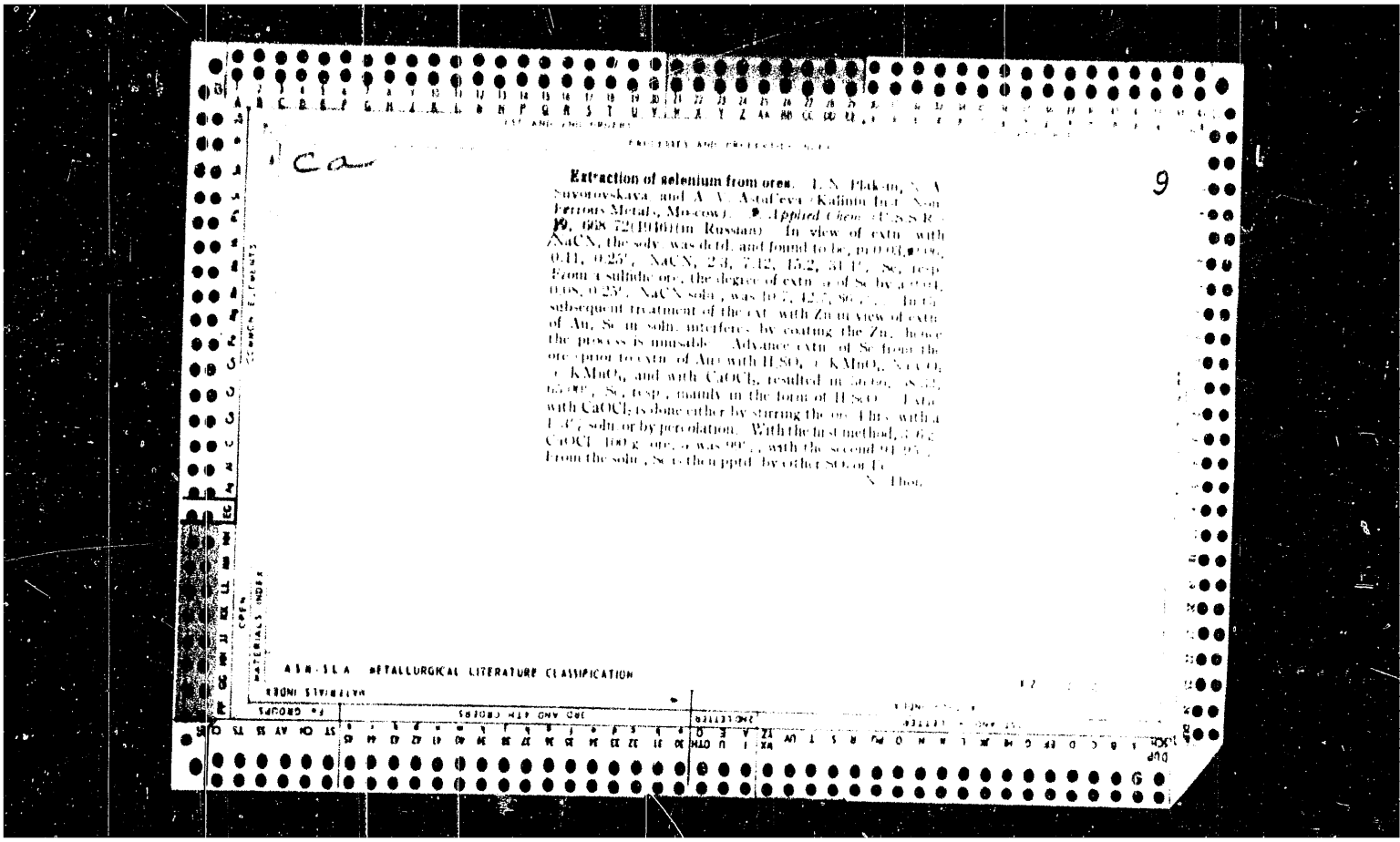
Inst. of Mining, U. S. S. R.
Kalinin Inst. Non-Ferrous Metals and Gold, Moscow.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



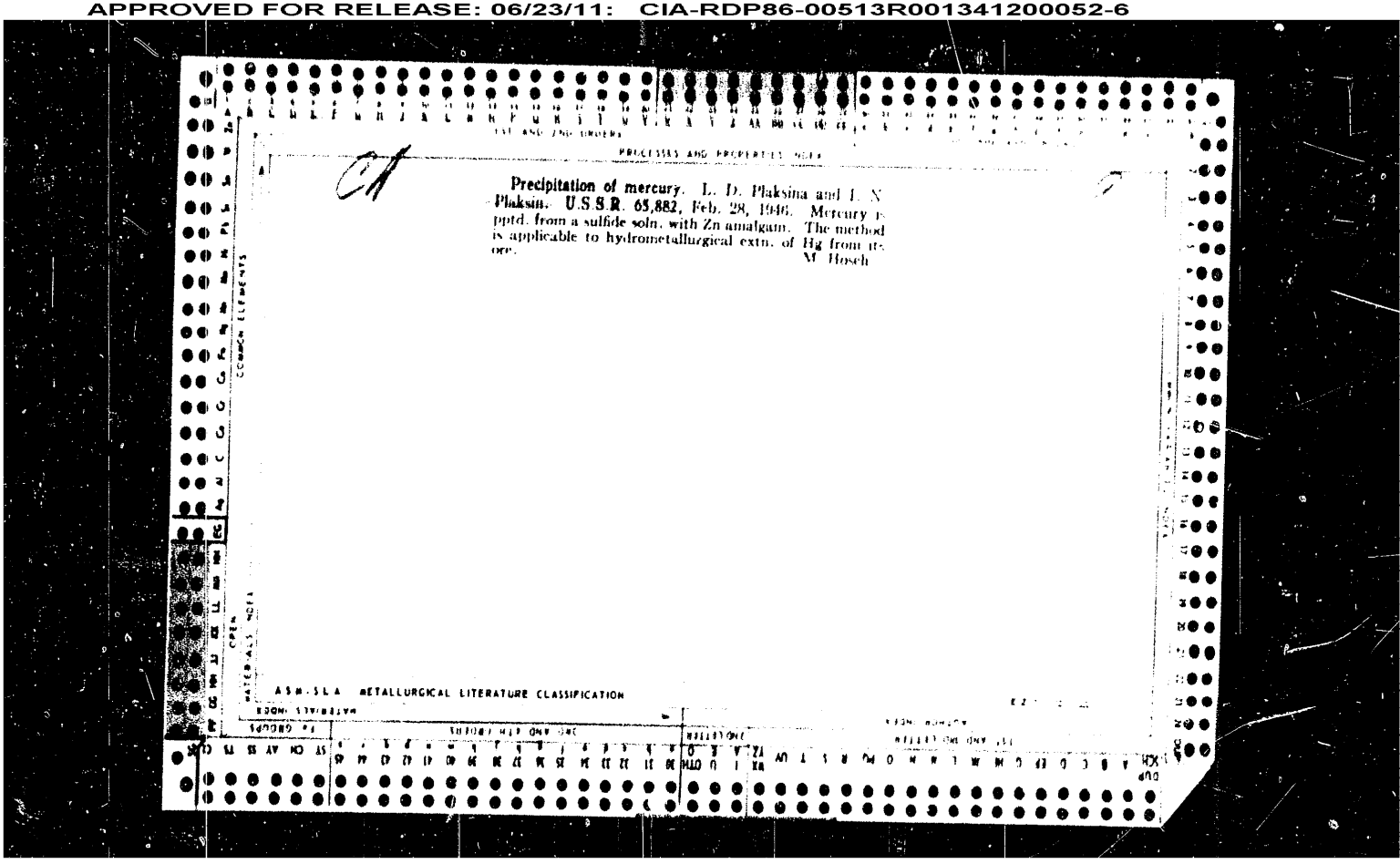
Influence of oxygen on the separation of pyrite and arsenopyrite by selective flotation. I. N. Plaksin and N. S. Vlasova (Inst. Mining, Moscow). *Compt. rend. acad. sci. U.R.S.S.* **52**, 55-6(1940). —By bubbling O through synthetic mixts. of pyrite, arsenopyrite, and quartz having the wt. ratios of usual ores, the authors were able to effect sepn. of pyrite and arsenopyrite. After 12 hrs.' passage of O, the froth recovery of Fe was 71.81%, and for As, 10.92%. Other oxidizing agents, such as H_2O_2, H_2SO_4, etc., as well as alkalis, did not act selectively.
H. C. Andersen

Inst. Non-Ferrous Metals and Gold im. Kalinin, Moscow



Extraction of selenium from ores. I. N. Plaksin, N. A. Suvorovskaya and A. V. Astaf'eva (Kalinin Inst. Non-Ferrous Metals, Moscow). *Zh. Prikl. Khim. (Zhurnal Prikladnoi Khimii)*, 1958, 31(9), 1361–1366 (in Russian). In view of extn. with NaCN, the soln. was detd. and found to be, in 0.3, 0.11, 0.25% NaCN, 2.3, 7.42, 15.2, 31.1% Se, resp. From a sulfide ore, the degree of extn. of Se by a 0.05, 0.25% NaCN soln., was in 2, 42.5, 90% . . . In the subsequent treatment of the ext. with Zn in view of extn. of Au, Se in soln. interferes by coating the Zn, hence the process is unusable. Advance extn. of Se from the ore, prior to extn. of Au, with H_2SO_4 + $KMnO_4$, Na_2CO_3 + $KMnO_4$, and with $CaOCl_2$, resulted in 40.0, 48.2, 62.0%, Se, resp., mainly in the form of H_2SeO_3. Extn. with $CaOCl_2$ is done either by stirring the ore 4 hrs. with a 1.4% soln. or by percolation. With the first method, 0.6 g. $CaOCl_2$ 100 g. ore, e was 90%, with the second 91.2%. From the soln., Se is then ppted. by other SO$_2$ or Fe . . .

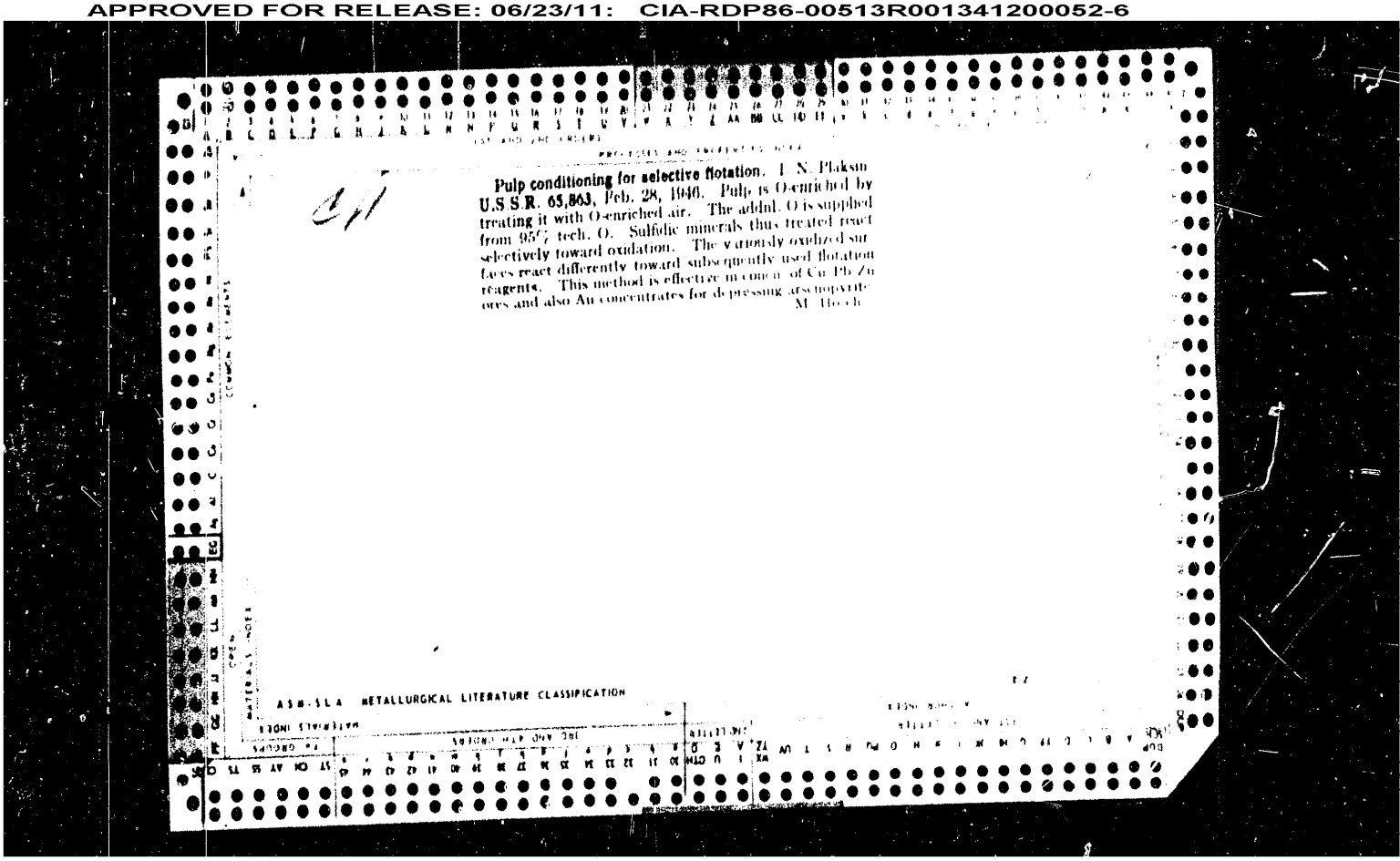
N. Thon.



PROCESSES AND PROPERTIES NOTE

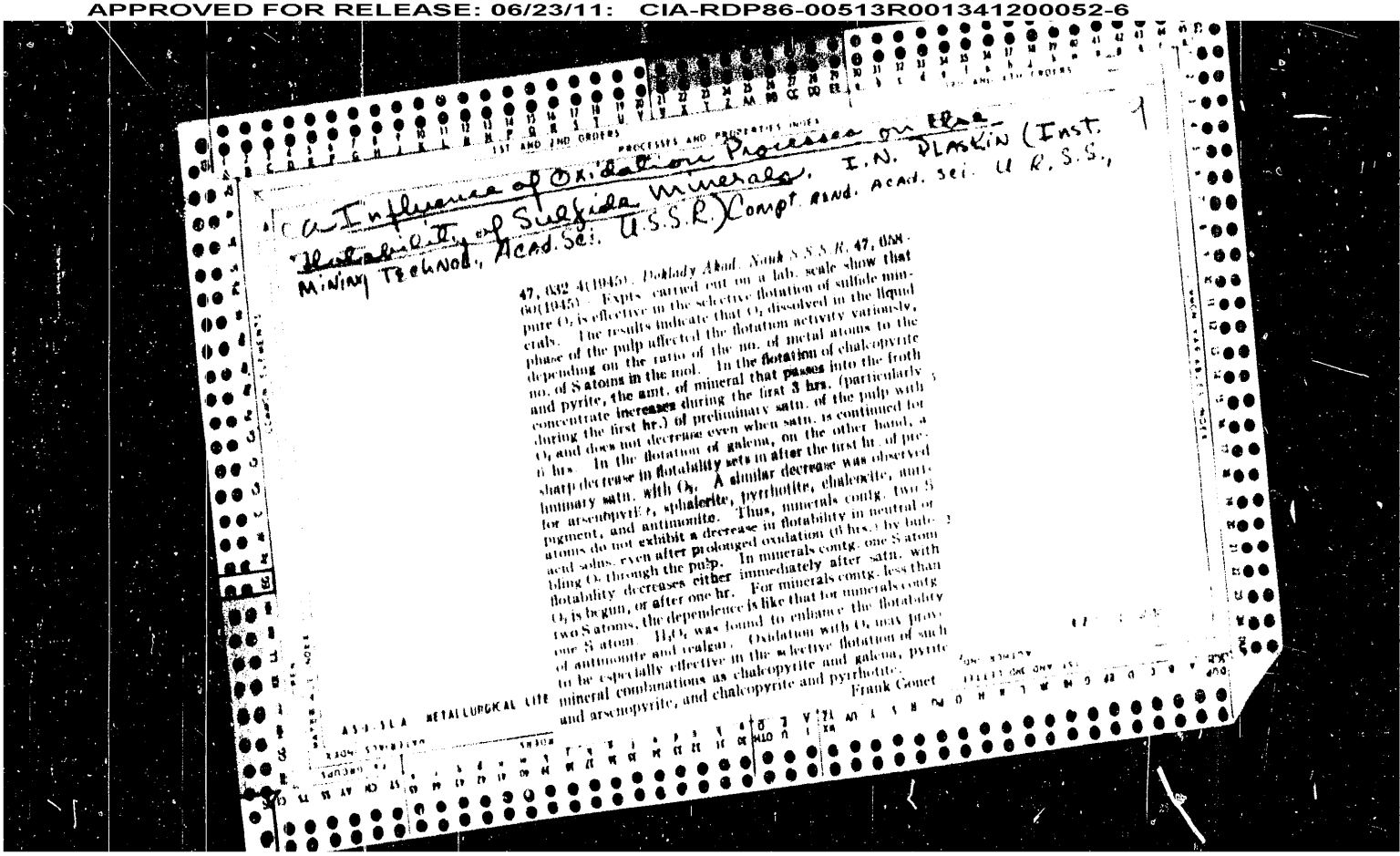
Precipitation of mercury. L. D. Plaksina and I. N. Plaksin. U.S.S.R. 65,882, Feb. 28, 1946. Mercury is pptd. from a sulfide soln. with Zn amalgam. The method is applicable to hydrometallurgical extn. of Hg from its ore.
M. Hosch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Pulp conditioning for selective flotation. I. N. Plakson. U.S.S.R. 65,863, Feb. 28, 1946. Pulp is O-enriched by treating it with O-enriched air. The addnl. O is supplied from 95% tech. O. Sulfidic minerals thus treated react selectively toward oxidation. The variously oxidized surfaces react differently toward subsequently used flotation reagents. This method is effective in concn. of Cu Pb Zn ores and also Au concentrates for depressing arsenopyrite ores. M. Hoch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



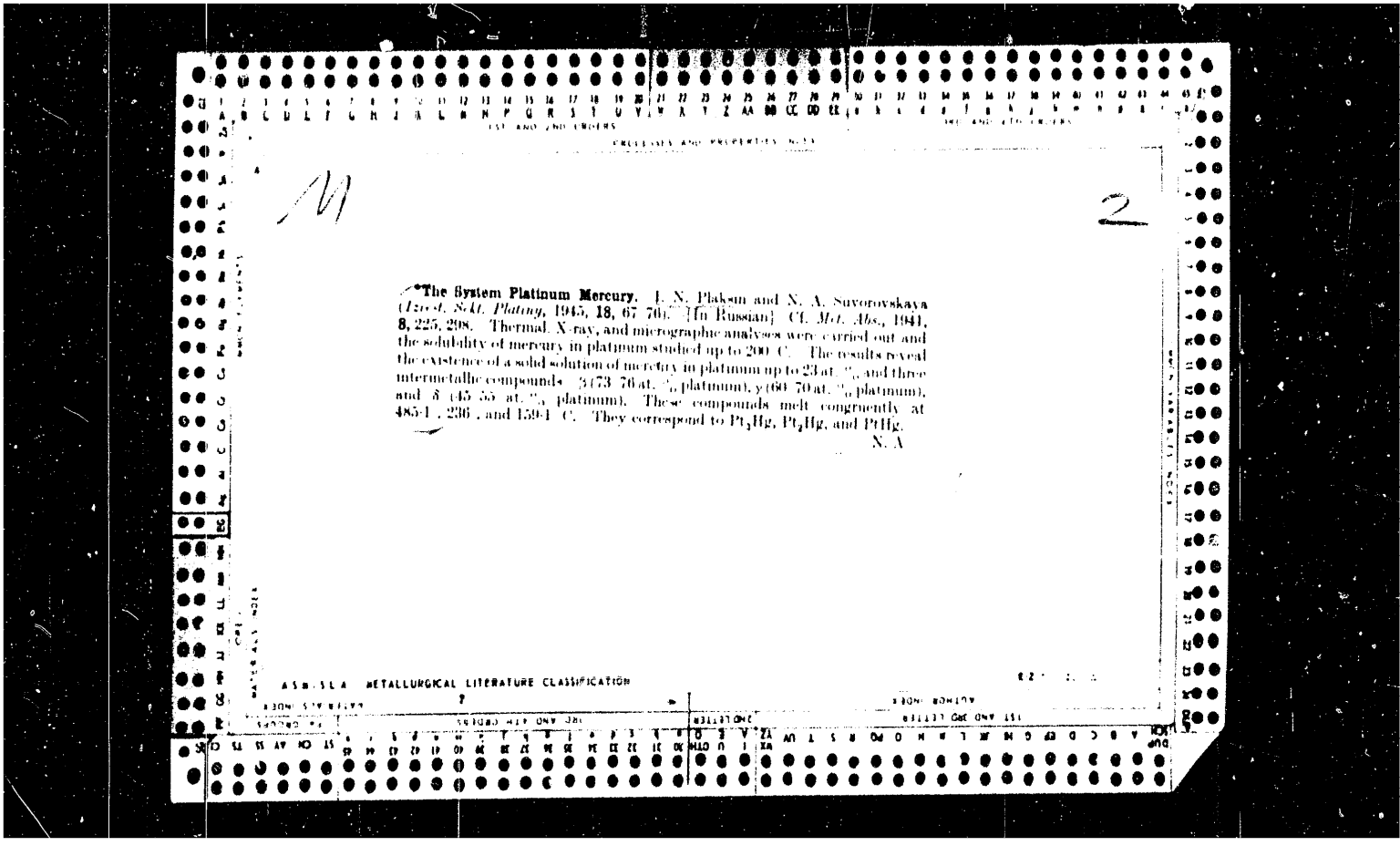
PROCESSES AND PROPERTIES INDEX
1ST AND 2ND ORDERS

a Influence of Oxidation Processes on Flota-
bility of Sulfide Minerals. I.N. PLASKIN (Inst.
Mining Technol., Acad. Sci. U.S.S.R.) Compt. rend. Acad. Sci. U.R.S.S.,

47, 432-4(1945). *Doklady Akad. Nauk S.S.S.R.* 47, 434-
6(1945). Expts. carried out on a lab. scale show that
pure O_2 is effective in the selective flotation of sulfide min-
erals. The results indicate that O_2 dissolved in the liquid
phase of the pulp affected the flotation activity variously,
depending on the ratio of the no. of metal atoms to the
no. of S atoms in the mol. In the flotation of chalcopyrite
and pyrite, the amt. of mineral that passes into the froth
concentrate increases during the first 3 hrs. (particularly
during the first hr.) of preliminary satn. of the pulp with
O_2 and does not decrease even when satn. is continued for
6 hrs. In the flotation of galena, on the other hand, a
sharp decrease in flotability sets in after the first hr. of pre-
liminary satn. with O_2. A similar decrease was observed
for arsenopyrite, sphalerite, pyrrhotite, chalcocite, anti-
mony, and antimonite. Thus, minerals contg. two S
atoms do not exhibit a decrease in flotability in neutral or
acid solns. even after prolonged oxidation (6 hrs.) by bub-
bling O_2 through the pulp. In minerals contg. one S atom
flotability decreases either immediately after satn. with
O_2 is begun, or after one hr. For minerals contg. less than
two S atoms, the dependence is like that for minerals contg.
one S atom. H_2O_2 was found to enhance the flotability
of antimonite and realgar. Oxidation with O_2 may prove
to be especially effective in the selective flotation of such
mineral combinations as chalcopyrite and galena, pyrite
and arsenopyrite, and chalcopyrite and pyrrhotite.

Frank Comet

ASSISTA METALLURGICAL LITE



The System Platinum Mercury. I. N. Plaksin and N. A. Suvorovskaya (*Izvest. Sekt. Platiny*, 1945, **18**, 67–70). [In Russian.] Cf. *Met. Abs.*, 1941, **8**, 225, 298. Thermal, X-ray, and micrographic analyses were carried out and the solubility of mercury in platinum studied up to 200° C. The results reveal the existence of a solid solution of mercury in platinum up to 23 at. %, and three intermetallic compounds: β (73–76 at. % platinum), γ (60–70 at. % platinum), and δ (45–55 at. % platinum). These compounds melt congruently at 485·1°, 236°, and 159·1° C. They correspond to Pt_3Hg, Pt_2Hg, and PtHg.

N. A

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

PLAK[illegible], I. I.

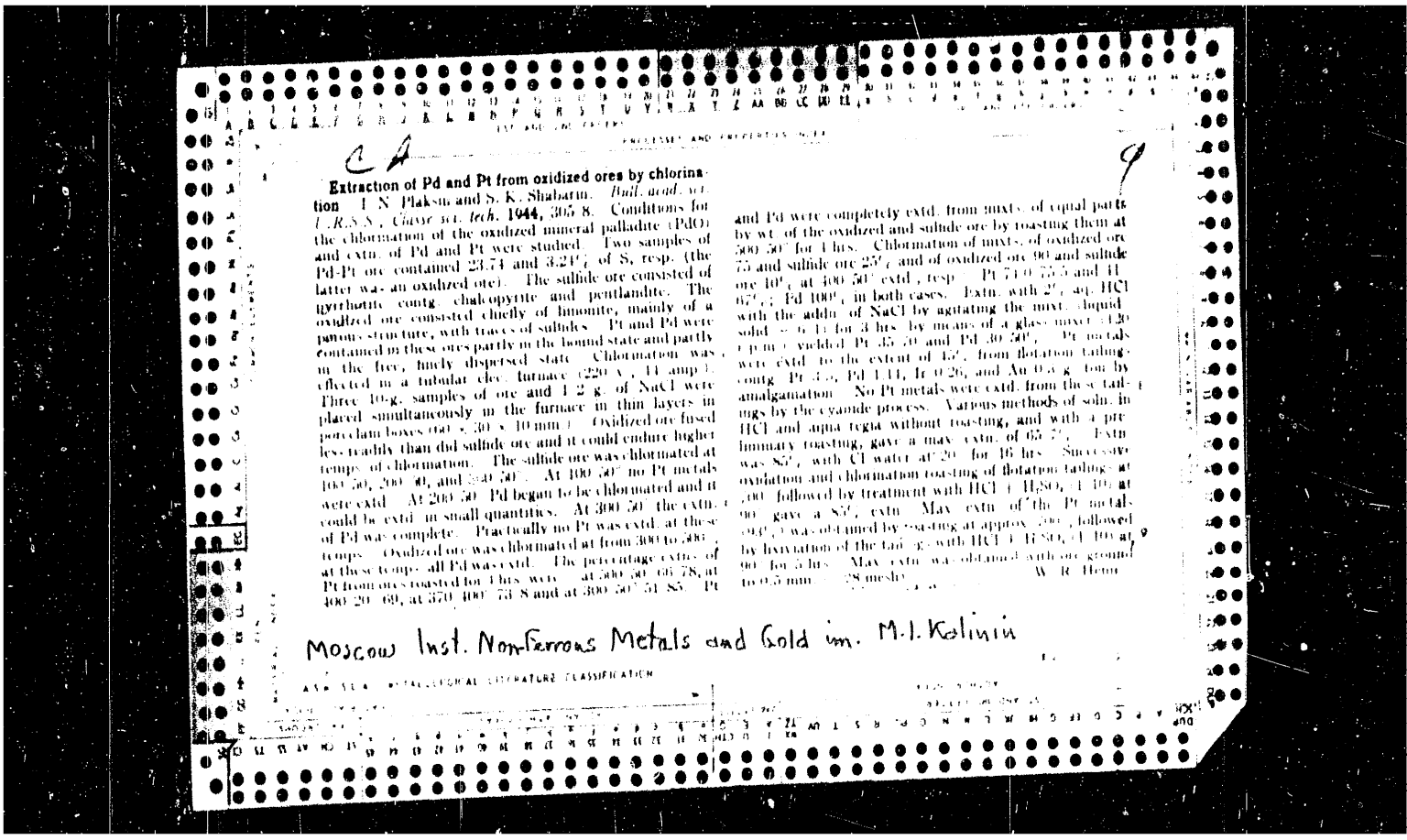
"[illegible]," [illegible]
[illegible], o.P, [illegible] Oct [illegible].

Material containing Au, Ag, or other [illegible] in [illegible] app. with Zn amalgam, [illegible], and cyanide soln. The mixt. is [illegible] to ext. the metal, partly into the amalgam and partly into the cyanide soln. To the mixt. is then added more Zn amalgam. This causes the transfer of the [illegible] entirely into the amalgam.

PLAKSIN, I. N.

"Concerning Ludwig's Curve of Flow," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 4-5, 1944

BR 52059019



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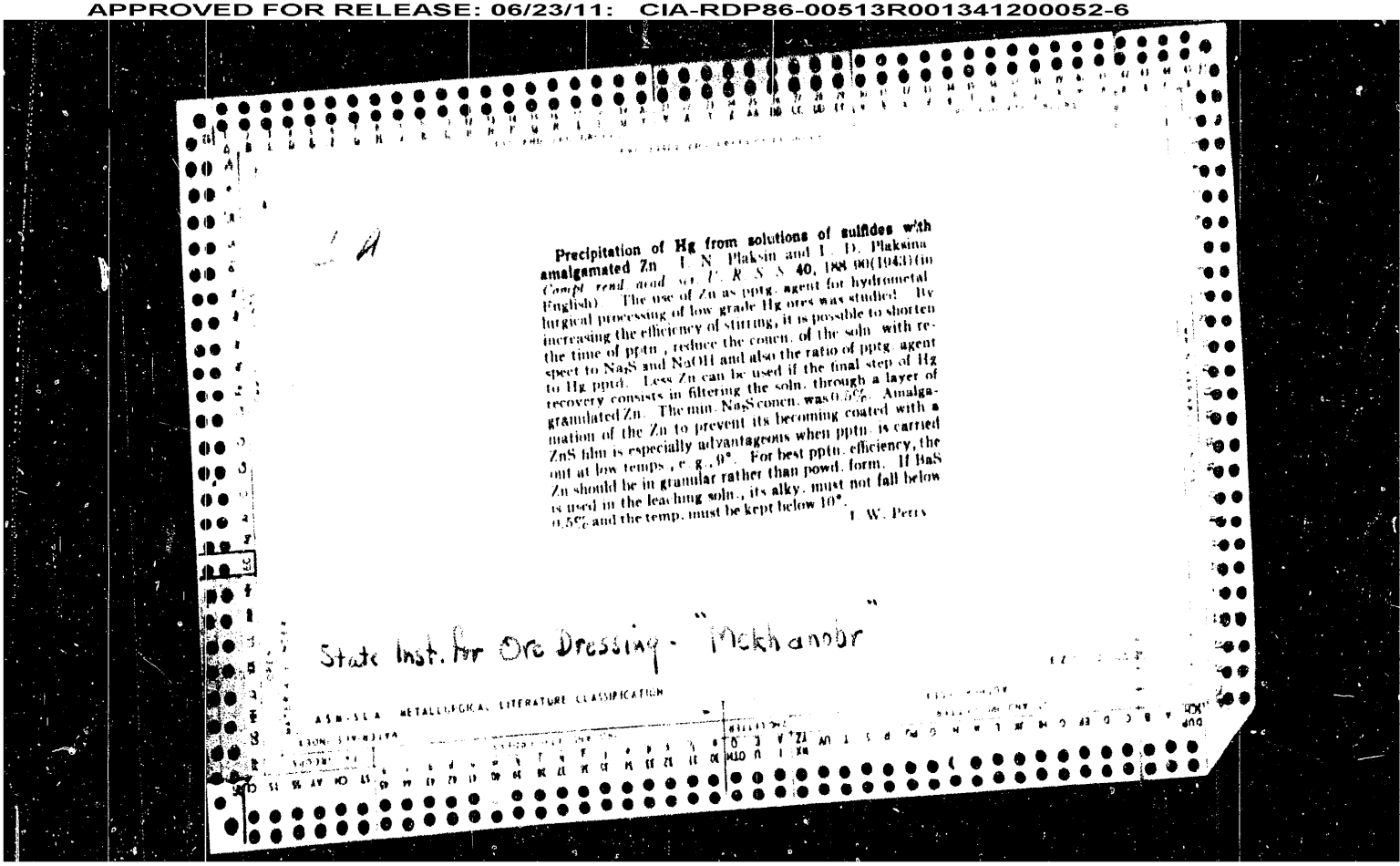
Extraction of Pd and Pt from oxidized ores by chlorination. I. N. Plaksin and S. K. Shabarin. *Bull. acad. sci. U.R.S.S., Classe sci. tech.* **1944**, 305-8. Conditions for the chlorination of the oxidized mineral palladite (PdO) and extn. of Pd and Pt were studied. Two samples of Pd-Pt ore contained 23.74 and 3.24% of S, resp. (the latter was an oxidized ore). The sulfide ore consisted of pyrrhotite, contg. chalcopyrite and pentlandite. The oxidized ore consisted chiefly of limonite, mainly of a porous structure, with traces of sulfides. Pt and Pd were contained in these ores partly in the bound state and partly in the free, finely dispersed state. Chlorination was effected in a tubular elec. furnace (220 v., 11 amp.). Three 10-g. samples of ore and 1.2 g. of NaCl were placed simultaneously in the furnace in thin layers in porcelain boxes (60 × 30 × 10 mm.). Oxidized ore fused less readily than did sulfide ore and it could endure higher temps. of chlorination. The sulfide ore was chlorinated at 400-50, 200-60, and 300-50°. At 400-50° no Pt metals were extd. At 200-50° Pd began to be chlorinated and it could be extd. in small quantities. At 300-50° the extn. of Pd was complete. Practically no Pt was extd. at these temps. Oxidized ore was chlorinated at from 300 to 500°; at these temps. all Pd was extd. The percentage extns. of Pt from ores roasted for 4 hrs. were: at 500-50°, 65.78; at 400-20°, 69; at 370-400°, 73.8; and at 300-50°, 51.85. Pt and Pd were completely extd. from mixts. of equal parts by wt. of the oxidized and sulfide ores by roasting them at 500-50° for 4 hrs. Chlorination of mixts. of oxidized ore 75 and sulfide ore 25% and of oxidized ore 90 and sulfide ore 10% at 400-50° extd., resp., Pt 71.0, 75.5 and 41.6%; Pd 100% in both cases. Extn. with 2% aq. HCl with the addn. of NaCl by agitating the mixt. (liquid : solid = 6:1) for 3 hrs. by means of a glass mixer (120 rpm.) yielded Pt 45.70 and Pd 30.50%. Pt metals were extd. to the extent of 45% from flotation tailings contg. Pt 4.5, Pd 1.44, Ir 0.26, and Au 0.6 g./ton by amalgamation. No Pt metals were extd. from these tailings by the cyanide process. Various methods of soln. in HCl and aqua regia without roasting, and with a preliminary roasting, gave a max. extn. of 65.2%. Extn. was 85%, with Cl water at 20° for 16 hrs. Successive oxidation and chlorination roasting of flotation tailings at 400° followed by treatment with HCl + H_2SO_4 + H_2O at 90° gave a 85% extn. Max. extn. of the Pt metals (94%) was obtained by roasting at approx. 500°, followed by lixiviation of the tailings with HCl + H_2SO_4 + H_2O at 90° for 5 hrs. Max. extn. was obtained with ore ground to 0.5 mm. (28 mesh).

W. R. Henn

Moscow Inst. Nonferrous Metals and Gold im. M. I. Kalinin

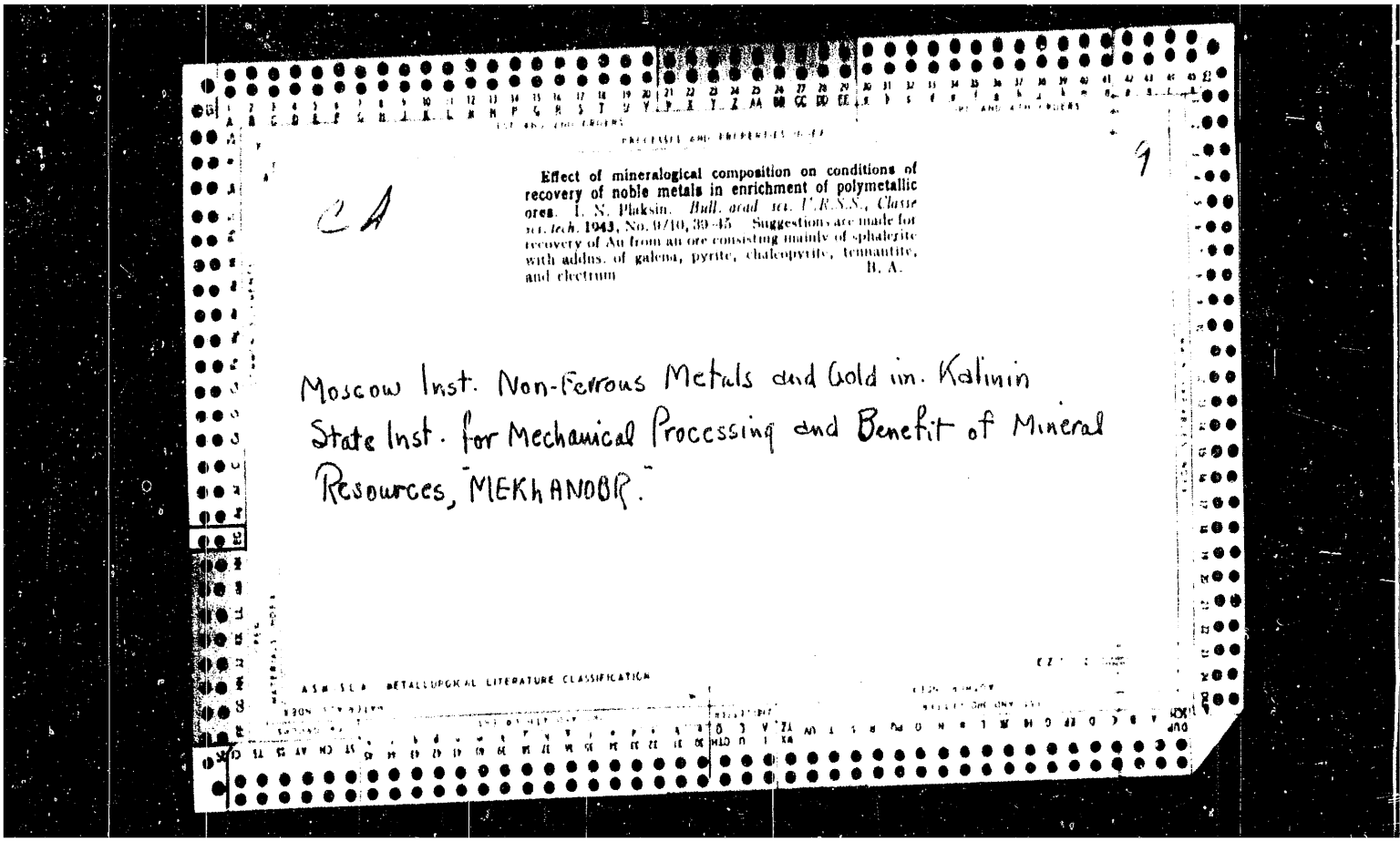


Precipitation of Hg from solutions of sulfides with amalgamated Zn. I. N. Plaksin and I. D. Plaksina. *Compt. rend. acad. sci. U. R. S. S.* **40**, 188-90(1943)(in English). The use of Zn as pptg. agent for hydrometal lurgical processing of low grade Hg ores was studied. By increasing the efficiency of stirring, it is possible to shorten the time of pptn., reduce the concn. of the soln. with respect to Na_2S and NaOH and also the ratio of pptg. agent to Hg pptd. Less Zn can be used if the final step of Hg recovery consists in filtering the soln. through a layer of granulated Zn. The min. Na_2S concn. was 0.5%. Amalgamation of the Zn to prevent its becoming coated with a ZnS film is especially advantageous when pptn. is carried out at low temps., e. g., 0°. For best pptn. efficiency, the Zn should be in granular rather than powd. form. If BaS is used in the leaching soln., its alky. must not fall below 0.5% and the temp. must be kept below 10°.

I. W. Perry

State Inst. for Ore Dressing - "Mekhanobr"

ASM-SEA METALLURGICAL LITERATURE CLASSIFICATION



CA

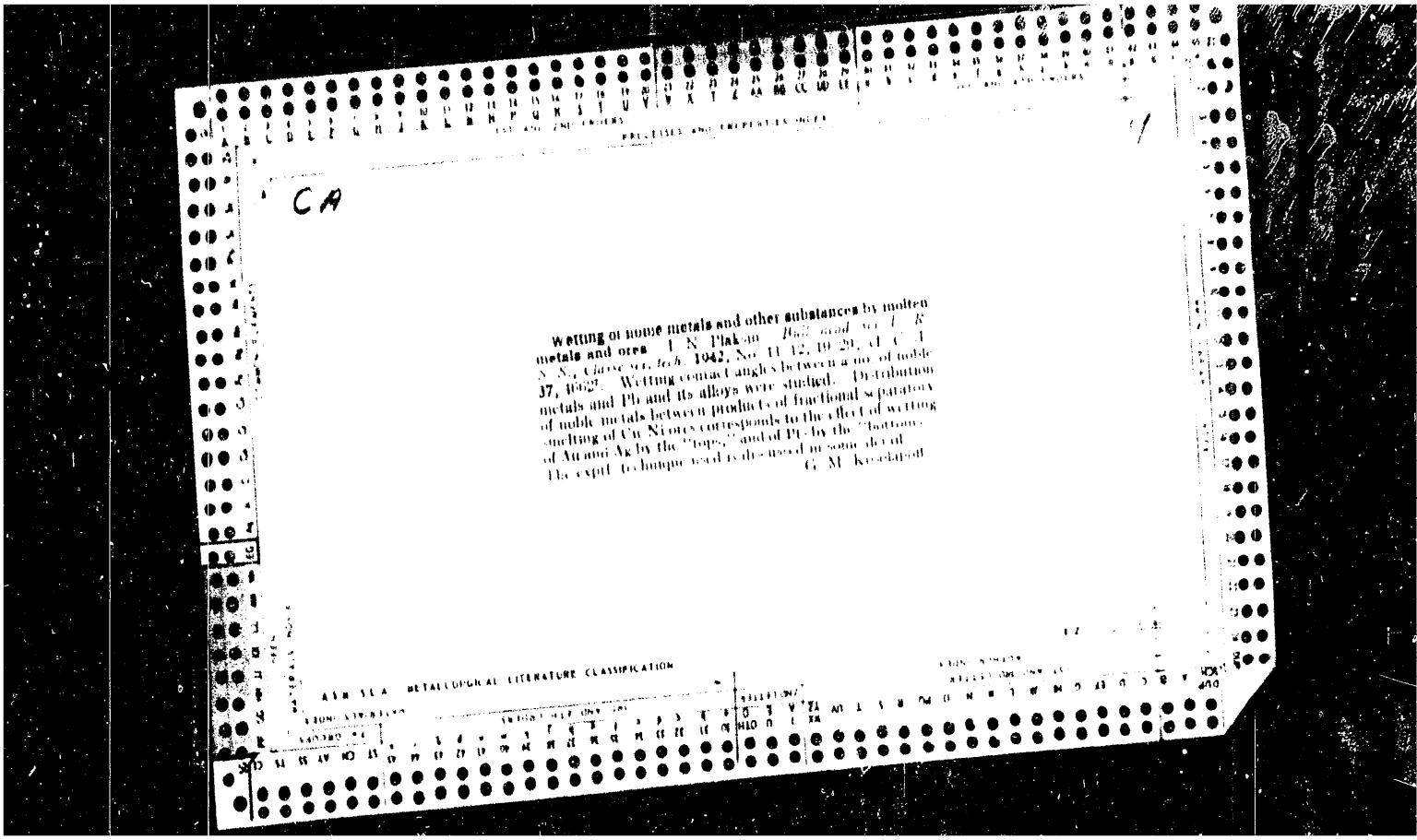
Effect of mineralogical composition on conditions of recovery of noble metals in enrichment of polymetallic ores. L. S. Plaksin. *Bull. acad. sci. U.R.S.S., Classe sci. tech.* **1943**, No. 9/10, 39–45. Suggestions are made for recovery of Au from an ore consisting mainly of sphalerite with addns. of galena, pyrite, chalcopyrite, tennantite, and electrum. B. A.

Moscow Inst. Non-Ferrous Metals and Gold im. Kalinin
State Inst. for Mechanical Processing and Benefit of Mineral
Resources, "MEKhANOBR."

PLAKSIN, Igor' Nikolaevich, 1900-

The metallurgy of precious metals; a textbook. Moskva, Vos nauch. tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1941. 439 p. (51-43877)

TN751.P5



CA

Wetting of some metals and other substances by molten metals and ores. I. N. Plaksin. *Bull. acad. sci. U.R.S.S., Classe sci. tech.* 1942, No. 11-12, 19-29. cf. C. A. 37, 1662. Wetting contact angles between a no. of noble metals and Pb and its alloys were studied. Distribution of noble metals between products of fractional separation on melting of Cu-Ni ores corresponds to the effect of wetting of Au and Ag by the "Steinen" and of Pt by the "matten." The expl. technique used is described in some detail.
G. M. Kondratieff

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION